

The Golden Hands Encyclopedia of **CRAFTS**

The complete guide to
traditional and modern home crafts

Volume 9



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Golden Hands Encyclopedia of **CRAFTS**



Marshall Cavendish

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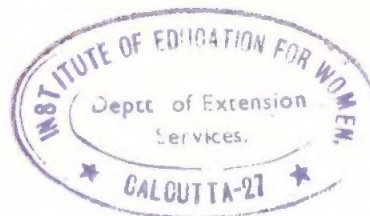
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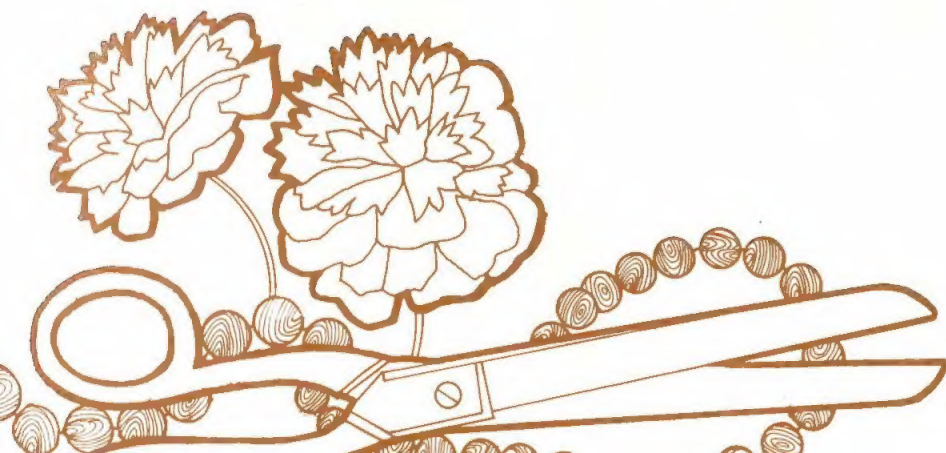
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* Not suitable for children without adult supervision



Suppliers addresses United Kingdom

Please send a s.a.e. with any enquiries to the suppliers below

Creative Ideas 32. Sequins at Ells & Farrier, 5 Princes St, Hanover Square, London W1R 8PH who also offer mail order service.

Creative Ideas 33. Tapestry supplies at The Needlewoman Shop, 146 Regent St, London W1 (who offer mail order service).

Creative Ideas 35. Materials at sewing departments of most large stores.

Paper 24. Pantograph at Cowling & Wilcox Ltd, 26 Broadwick St, London W1 who also offer mail order service. Leather frames at Harrods, Knightsbridge, London SW1.

Paper 25. Materials at stationers and art supply shops. Lamp stand, vase, ashtray and table at John Lewis, Oxford St, London W1.

Collage 3. Materials at stationers, yacht chandlers and gardening supply shops.

Quilting 2. Synthetic wadding at John Lewis, Oxford St, London W1 and branches. Wide selection of boldly printed fabrics suitable for machine quilting at Habitat, 206 Kings Rd, London SW3 and branches. Lamp, clock and candles also at Habitat. Blouse and skirt at Top Shop, Oxford Circus, London W1.

Quilting 3. Wadding at John Lewis, Oxford St, London W1 and branches.

Quilting 4. Wadding at John Lewis, Oxford St, London W1 and branches. All accessories (except for floor covering) at Harvey Nichols Ltd, Knightsbridge, London SW1.

Enamel 6. Materials at Reeves, PO Box 48, 249 Lincoln Rd, Enfield, Middx EN1 1SX for mail order or 178 Kensington High St, London W8 for personal shoppers. Blouse at Crocodile, 102 New Bond St, London W1 and branches.

Enamel 7. Materials at W G Ball Ltd, Longton Mill, Anchor Rd, Longton, Stoke-on-Trent, Staffs ST3 1JW who also offer mail order service. Decanter and ice bucket at Habitat, 206 King's Rd, London SW3 and branches.

Ice tongs at Harrods, Knightsbridge, London SW1.

Printing 12. All lino materials and printing inks at art supply shops or by mail order at Reeves, see above. Frame at Blackman Harvey Ltd, 29/39 Earlham St, London WC2. Napkins at Harrods, Knightsbridge, London SW1. Table, chairs, mats, cutlery, glasses, salt and pepper mills and bread basket at Habitat, 206 Kings Rd, London SW3 and branches.

Printing 13. Printing inks for various surfaces, silk screens and silk screen materials at Selectasine, 22 Bulstrode St, London W1 who also offer mail order service (catalogue available). Kits by Reeves at 249 Lincoln Rd, Enfield, Middx EN1 1SX for mail order service. Screens, squeegees and inks also at Sericol, 24 Parson's Green Lane, London SW6.

Printing 14. Helizarin dyes for fabric screen printing and all other screen printing supplies at Selectasine, 33 Bulstrode St, London W1 who also offer mail order service (catalogue available). Dylon cold water dyes and Procion Dyes with Manutex thickener at Hobby Horse, 15 Langton St, London SW10 who also offer mail order service (catalogue 25p including postage). Ladies trousers at John Lewis and toys at Galt Toys (see above). Tea set at The General Trading Co Ltd, 144 Sloane St, London SW1. Photographed at St Mark's Montessori Nursery School, St Mark's Church Hall, Balderton St, London W1.

Basketry 6. Materials at Colorcraft, 1 Emson Close, Saffron Walden, Essex CB10 1HL who also offer mail order service.

Metal 13. Materials sold separately and in kit form at Glenroy Art Production Ltd, 3 Dorothy Avenue, Bracebridge Heath, Lincoln LN4 2NE and Integrated Packaging Group Ltd, 10 Vivian Avenue, Sherwood Rise, Nottingham, who also offer mail order service. Model soldier from a selection at Tradition, 5a & 5b Shepherd St, London W1.

Clay 21. Clay, grog, glazes and oxides at The Fulham Pottery Ltd, 210 New Kings Rd, London

SW6 4NY or at Southern Supplies Centre, 42 Thorley Road, Tonbridge, Kent. Ferro (Great Britain) Ltd, Wombourne, Wolverhampton WV5 8DA who will also supply overseas; and other potters' suppliers. Pottery boat from Craftsmen Potters Shop, William Blake House, Marshall St, London W1.

Clay 22. Materials at The Fulham Pottery Ltd, 210 New King's Rd, London SW6 4NY or at Southern Supplies Centre, 42 Morley Rd, Tonbridge, Kent; Harrison Mayer Ltd, Meir, Stoke-on-Trent ST3 7PX; Ferro (Great Britain) Ltd, Wombourne, Wolverhampton WV5 8DA who also supply overseas; and other potters' suppliers.

Clay 23. Materials at The Fulham Pottery Ltd, 210 New King's Rd, London SW6 4NY or at Southern Supplies Centre, 42 Morley Rd, Tonbridge, Kent; Harrison Mayer Ltd, Uttoxeter Rd, Meir, Stoke-on-Trent, Staffs ST3 7PX; Ferro (Great Britain) Ltd, Wombourne, Wolverhampton WV5 8DA who also supply overseas; Wengers Ltd, Garner St, Etruria, Stoke-on-Trent, Staffs ST4 7BQ.

Knitting 6. Cradle at The Pine Mine, 57 New King's Rd, London SW6 4SE. Rag doll at Galt Toys, 80 Great Marlborough St, London W1V 2BT.

Lapidary 3. Jewelry findings at Gemrocks of Holborn Ltd, 7 Brunswick Shopping Centre, Marchmont St, London WC1, who also offer mail order service.

Paint 7. Unpainted chests at John Lewis and branches (see above).

Knitting 4. Enquiries regarding Pingouin yarns at French Wools Ltd, 7/11 Lexington St, London W1R 4BU and by mail order from Modern Knits, 14a Baddow Rd, Chelmsford, Essex. Aero circular twin pins at The Needlewoman Shop (see under Creative Ideas). Ladies trousers at John Lewis. Polo neck sweater and basket at Harvey Nichols, Knightsbridge, London SW1.

Carpentry 14. China at John Lewis, see above.

Plastics 12. Write to Plastic Coatings Ltd, Trading Estate,

Farnham, Surrey for list of stockists of Vycoat ACA60 (polyvinyl) coating. Dylon or Scotch guard water-repellent sprays at general stores. Roller blind kits at W. Whiteley Ltd, Queensway, London W2 and Beauty Blinds Ltd, Priory Works, Gundry Lane, Bridport, Dorset. Toys at Galt Toys, 30 Gt Marlborough St, London W1. Plant from a selection at Selwyn Davidson, 31 Berwick St, London W1.

Glass 9. Glass and lead at Chelsea Glassworks, 105 Fulham Rd London SW6.

Sewing 11. Graph paper at John Lewis, Oxford St, London W1 and branches.

Metrication

In this volume you will find two systems of measurement. The first set of figures refers to the metric system and the Imperial figures follow in brackets. Wherever possible, a commonsense approach has been adopted and both sets of measurements have been worked out in round numbers. **BUT BEWARE!** This means that metric and the Imperial figures are *not* equivalent so make sure you only work with one or other set of figures.

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Camera Press

Creative ideas 32

Here are a couple of simple ways to add sparkle to party-time clothes when you don't feel up to getting the family heirlooms from the bank vault.

Unusual accessories made from old ties and fancy frog fastenings or sequins can expand a small wardrobe.

For the frog-decorated tie you will need an old plain tie. Assortment of frog fastenings. Simply arrange the frog fastenings on the front of the tie and stitch in position.

For the sequin tie you will need the wider half of an old tie for the backing. Sequins in assorted colours. Piece of ribbon long enough to go around your neck. Snap fastener, needle and thread. Hem the cut end of the tie.

Make a few stitches to nip in each side a little way from the top to simulate a knot.

Attach ribbon to each top corner, cut in half at centre back, neaten ends.

Sew fastener to ribbon ends. Now sew on sequins either in stripes as shown here, or, if the tie has a pattern, repeat it in sequins.

Portraits from silhouettes

Paper 24



Delightful 18th-century silhouette painted on flat glass, by Charles Rosenberg.



The art of the silhouette owes its name to an 18th-century French finance minister called Etienne de Silhouette, whose hobby was cutting out profiles in paper.

Monsieur Silhouette and his unpopular tax reforms were soon forgotten but enthusiasm for the craft named after him has never waned.

Before the invention of photography the art of silhouette portraiture was particularly appreciated as a quick and simple method of getting a 'likeness', and there is hardly a museum in the world without an example of this craft, some exquisitely painted on plaster or ivory, some on card, others on glass backed with wax.

But not all silhouettes were executed by artists. It was a pastime that could be enjoyed by anyone, and this of course remains true today.

Traditionally, silhouette portraits were made by drawing a profile freehand, or by casting a shadow in front of a candle on to a piece of paper, then reducing it with an apparatus called a pantograph. The shape was then filled in with black ink.

Today's methods are very much the same, except that modern lighting produces better results. Use a clear, electric light bulb without a shade to project the shadow of the sitter in an otherwise darkened room. Better still, use a slide projector as a source of light if you have one. This will make the profile sharper and eliminate the second shadow which otherwise sometimes appears.

The light bulb method

You will need:

A sheet of thin white paper and a sheet of black or coloured cartridge paper. Alternatively a sheet of cartridge weight paper, black on one side, white on the reverse.

Drawing pins. A pencil or felt-tipped pen. Sharp scissors.

A slide projector or an unshaded electric light with clear bulb.

A model. A chair.

☐ Seat the model on the chair in a darkened room, as near the wall as possible, with his or her profile parallel to the wall.

☐ Pin the paper to the wall directly behind the face (white side uppermost if two-toned paper is used).

☐ Position the light on the other side of the face, adjusting it until the shadow falls sharply on to the paper (fig.1).

1. The easiest method of making a silhouette portrait is to pin a sheet of paper to the wall, seat the sitter close to it and trace the outline of his/her shadow as cast by an unshaded bulb or slide projector.

Trace the profile of the face and head on to the paper with pencil or felt-tipped pen.

If you have used two-toned paper, simply cut along your pencilled lines, turn the paper over and your silhouette is ready.

If you have used plain white paper, trace the profile on to black or coloured paper of your choice, and cut it out.

To reduce or enlarge a silhouette

If the accuracy of the light bulb method appeals to you but you want the end result to be a small silhouette, you can use the light bulb technique to trace the sitter's profile and reduce the silhouette afterwards. It is also possible to enlarge a small picture, such as a

profile snapshot, to make a larger silhouette.

Use either the reducing and enlarging technique described in Design know-

Small profile snapshot is simultaneously traced and enlarged by a pantograph. The instrument is screwed to a flat surface at A and masking tape is used to prevent original and copy paper from slipping. Adjustable central screws are set in holes numbered '3' because original is to be enlarged three times. As one hand guides tracer (BD) along lines to be copied, other hand lightly holds pencil lead (C) and enlarged reproduction appears on copy paper. If the pantograph were reassembled with lead at BD and tracer at C, reproduced copy would be one-third original size.

how chapter 4 page 112, or a pantograph. A pantograph is an adjustable wooden or plastic instrument, available from art shops, for mechanical copying on a reduced or enlarged scale. As the tracer is drawn along the lines to be copied, a lead simultaneously reproduces them in reduced (or enlarged) form. The scale of reproduction is determined by placing central screws in numbered holes, and the positioning of tracer and lead determines whether the original is to be reduced or enlarged.

The window method

Here is another way to make a silhouette. It produces a smaller portrait than is possible using the light bulb technique. It must be pointed out, how-





Children's portraits by Caroline Porter, framed as photos.



Imaginatively composed silhouettes using colour are fun.

ever, that you need a good eye to get really accurate results with this method. You have to draw the profile rather than simply trace the shadow, and the further away from the model, the greater the challenge.

You will need:

- A ground floor window.
- A sheet of cellophane paper.
- A felt-tipped pen.
- Transparent adhesive tape.
- A model.

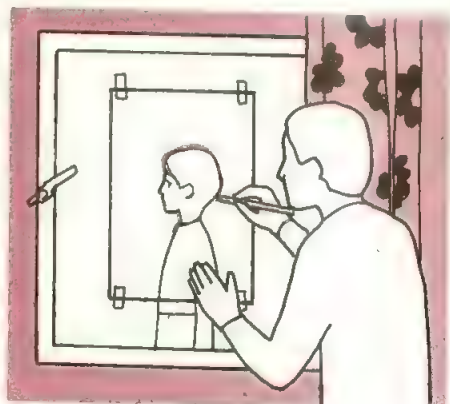
□ Place the sheet of cellophane over the inside of the window glass and secure it with transparent tape.

□ Stand your model out of doors, in profile on the other side of the window. To get the silhouette the correct size, ask the model to move back until his or her head is the desired size. Then trace the silhouette on to the cellophane with felt-tipped pen (fig.2).

□ Trace on to coloured paper and cut out as described above.

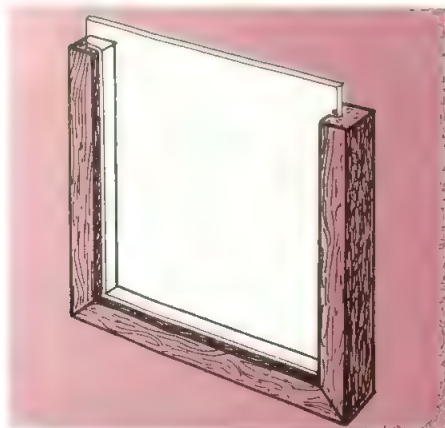
If you don't have a ground floor win-

2. Right: window method of making a silhouette involves standing model outside and tracing his outline on cellophane attached to window pane.





Dick Miller



dow, buy an old picture frame from a junk shop, or make a wood and glass or Perspex frame (fig.3). Then make the silhouette in a large room, following the procedures described above.

Original ideas

Don't feel bound to use only the traditional black and white silhouette papers. Extremely interesting variations can be made using coloured papers of your choice. And there is no reason to restrict yourself to head and shoulder portraits. Silhouettes can be

3. Left: simply constructed frame enables window method to be used indoors.

Silhouette plus ribbons, feathers and lace turns a portrait into a period fashion picture. By Alan Wheeler.

made of hands, people wearing amazing hats, a bowl of flowers, or almost anything you like.

Have fun too with the way you use your silhouettes. Instead of framing them singly in the conventional way, mount two heads face to face on a heart-shaped background; make silhouettes of all the family and put them in one frame; place silhouettes under glass or Perspex on top of a white table; or stick them on to table mats, add names and varnish them.

Free designs with string

Yarn —
collage 3



Patterns that occur in nature lend themselves to a very free interpretation in yarn collage. Man-made objects, such as parts of buildings—windows, parapets, roofs and chimneys—suggest a more precise design which demands greater control of the yarn. On the other hand, with the ripples of the water in still and fast flowing streams or the curves in the grain of wood as inspiration, you can allow the yarn to go its own way without too much contrivance.

Some more things to look at are: red cabbage, pebbles and stones, sections of an onion, green pepper or pomegranate, beans, maize pods, dried seed heads, cloud formations, broken ice on puddles, the waves in the sea on a stormy day, stubble burning in a field after harvest, limpets on a rock.

Use nature as inspiration for collage by abstracting movement and texture, and interpreting and embellishing them as freely as you like.

1. Lichen suggests a mixture of sisal and teased-out hessian threads, arranged in a light, random pattern.

2. Limpets on a rock could be the inspiration for a collage in boucle yarn and string. Extra texture could come from beads and knots in the string.

3. Ripples on water suggests a nubby yarn in a mixture of black and white, arranged to tone from mainly black with some white to vice versa.

4, 5. Stubble burning after harvest (left) was the inspiration for both the movement and the tonal value of the collage (right).



Jerry Tubby



Jerry Tubby



Heather Angel



Picturepoint

Camera Press





Isolating the area. To isolate a small part of a large area, cut a small hole in a sheet of cartridge paper or cardboard roughly the same size as the board you intend to use for the collage.



To help you concentrate on your chosen area, look at it through a frame cut from a piece of card.

Depending on the type of object, either use the paper to frame the area closely or peer through from a distance. This enables you to concentrate on the area and observe its rhythms and texture. Once you have found the design you wish to interpret, draw the outlines on to your board.

The board. The board which forms the background for the collage can be plain or painted as described in *Collage*, chapter 2, page 734, or you could cover it by gluing on coloured cardboard, strawboard, hessian or burlap.

The yarn. Vary the yarns you use and look for strings of different textures and thicknesses, unusual wools and other threads. It is not necessary to buy many different sorts initially—you can start with one or two types of string and vary them by combing to make a rough texture, plaiting, knotting and doubling (see *Collage*, chapter 2, page 734). Smooth, white parcel string and dark, tarred garden string make a good contrast, for example, and will often form a better design than if you use several colours.

Leaving some background. There is no need to cover the background completely because the coverings suggested above can enhance the design and allow the main elements to stand out.

6. Wood is a great source of inspiration for collage. Look at a piece of fallen branch, examine the base of an old tree with its gnarled roots and knotted, chipping bark, and isolate the areas that appeal to you.

7. Sketching the main lines of the wood with its curving grain and knots is the best starting point.

8. Collage based simply on wood grain with coils to show the knots.

9. The basic design of this collage came from wood but then it was embellished by further freehand design to echo the movement of the grain.

10, 11. More elaborate interpretations of wood using different textures of string to emphasize the flowing lines.

Outline designs on quilting

Cloth —
quilting 2

Quilting chapter 1 covered various fabrics, backings, types and weights of filling for wadded quilting.

This chapter deals with quilting round a design on a printed fabric and with working quilting on a knitted garment.

Quilting a printed fabric

The easiest way of quilting a decorative pattern, other than a simple one based on straight lines, is to choose a fabric with a bold design and outline each shape with machine stitching. The swan fabric shown here is ideal for this purpose and would make a spectacular cover for a bed.

Tacking. Cut out the top and backing fabric to the same size. Cut generously to allow for some reduction in size during quilting. Press to remove all creases.

□ Cut the wadding 2.5cm-5cm (1"-2") smaller all round than the fabrics.

□ Lay the backing fabric right side downwards, then the wadding and then the top, printed fabric, right side upwards, on a flat surface.

□ Tack three layers together as described in Quilting chapter 1, page 882. This ensures that the layers do not move, causing the work to pucker or wrinkle, whilst stitching.

Working the quilting. Adjust the thread tension and reduce the pressure on the presser foot of the sewing machine. Work a test sample on some spare fabric and wadding.

□ Use contrasting or matching thread with a medium length stitch.

Work each motif in the same way.

□ Starting at the innermost point of the design, and working outwards, stitch along the edge of each shape. Thus on the swan the blue diagonal line was stitched first, followed by the body, neck and beak shapes.

□ Finally work details such as the swan's neck and eye.

□ Take each thread through to the wrong side and finish off by working into the wadding by hand until the end is 'lost'.

Note: when quilting a large item such as a bed cover it may be easier to quilt in 'blocks'. (This technique is covered in chapter 3.)

Above left: a bold, swan-printed fabric, wadding and backing fabric tacked together before the motif is quilted by machine stitching. Tacking ensures that the layers do not move whilst stitching.

Below left: the machine quilted motif with the tacking stitches removed. Right: choose a spectacular floral print to make a quilted bedspread for maximum impact. In this room the same fabric has been used to make a roller blind and matching cushions, but the fabric has not been quilted.





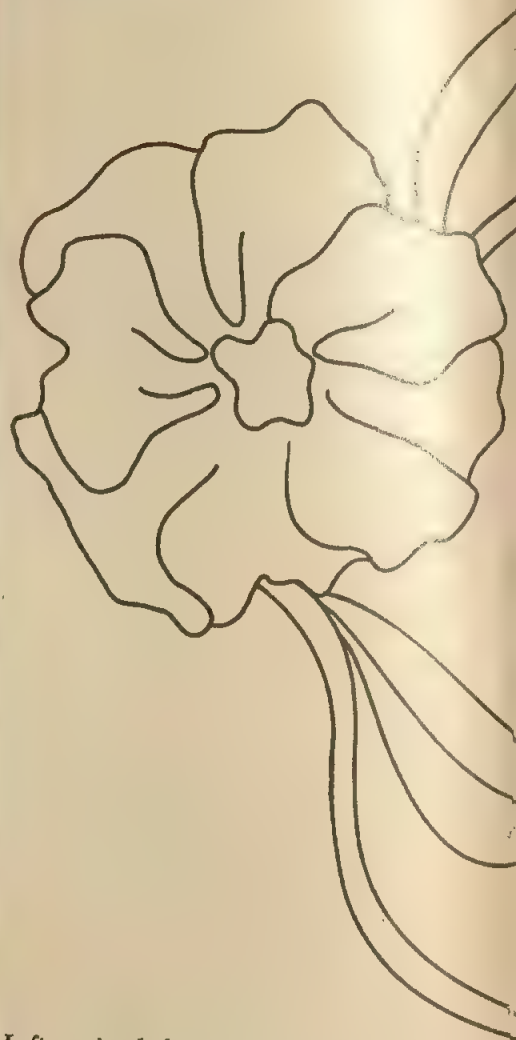


Quilting on plain fabrics

The cardigan shown here illustrates how quilting can be worked effectively on other than smooth and closely woven fabrics and it also demonstrates how to use a paper pattern on stitching by machine.

This type of quilting is equally suited to fine textured fabrics such as silk and looks particularly good on a simply designed garment. Try it round the hem of a plain linen or silk evening skirt, or decorate a round neckline or a cuff. Test the tension and stitch length of your machine by working a simple pattern on a scrap of the same or similar fabric. The quilting is worked on the wrong side of the work so that the needle does not pull in the fabric so ensure that the *back* of the stitching is perfect as this will be seen on the right side of the work.

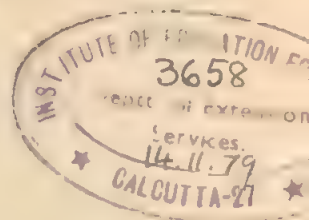
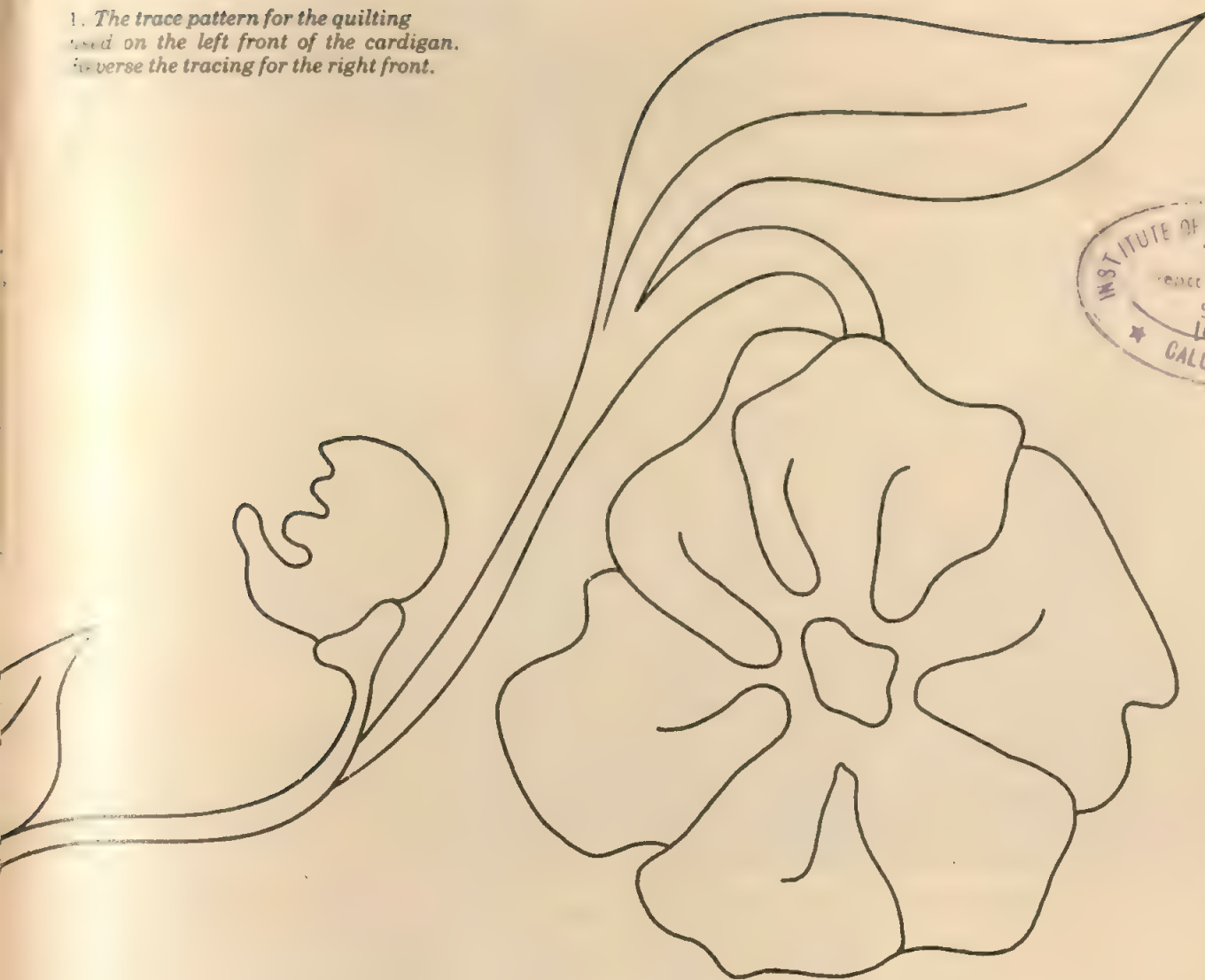
Note: If you are using an electric machine it is often easier. When working difficult sections, to turn the wheel by hand so that you have better control of the work.



Left: a simple knitted cardigan is given a whole new look of luxury by clever use of machine quilting.
Designer: Eleanor Harvey.

Melvin Grey

1. The trace pattern for the quilting need on the left front of the cardigan.
Reverse the tracing for the right front.



Quilted cardigan

You will need:

A simply designed, stocking stitch cardigan.

Two 33cm x 23cm (13"x9") pieces light-weight backing fabric (such as washable rayon lining).

Two 33cm x 23cm (13"x9") pieces 55gm (2oz) synthetic wadding.

Matching or contrasting thread.

Tracing paper and pencil.

Working the quilting. Make a tracing of the flower pattern (fig.1) for each side of the cardigan front (one will be reversed).

☐ Press the cardigan and lay the pieces of wadding on the wrong side of each front. Place the backing fabric on top, then pin and tack the three layers together, working from the centre outwards.

☐ Pin the pattern into place over the backing making sure the design is level on the two sides (fig.2).

☐ Stitching through the tracing paper, work carefully round the flower first,

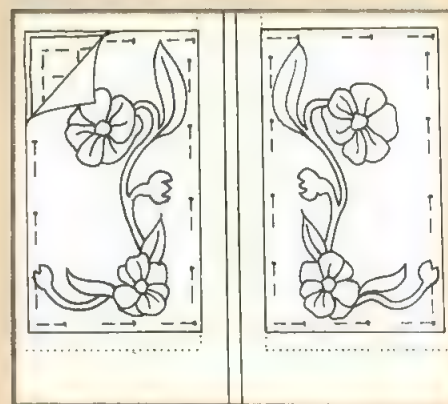
working the centre lines out to the edges.

☐ Stitch the leaves, stems and buds.

☐ Remove the work from the machine, tear away tracing paper, and finish off all threads by working them into the wadding by hand.

☐ Trim surplus wadding and backing to within 6mm ($\frac{1}{4}$ ") of the design.

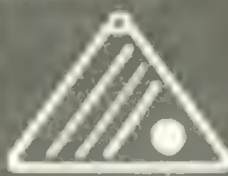
☐ Neaten edges by hand.



2. Pattern pinned on top of backing.

Threads, lumps and embedding

Enamel 6



The simplest type of design is a linear one made from threads broken to the required length, but it is quite possible to bend threads. To do this pick up a thread of enamel with tweezers or pliers—and hold it over the low flame of a blow torch, such as the Rosin Varafame. (Alternatively you could use one of the rings on a gas cooker.) The enamel will soften and bend (fig.1) —sometimes rather suddenly. This process is not very easy to control at first, but it is fun to try and, as with so many things, practice makes improvement if not perfection.

You can, if you wish, join threads together in a pattern on a square of asbestos by fusing them with the very low flame of the blow torch (fig.2a) and then when the threads have cooled, lift the entire pattern on to the prepared enamel piece, using tweezers or a small palette knife (fig.2b). The tree in the landscape was fused in this way. This is a useful process because sometimes carefully arranged, overlapping threads put straight on to a piece can slip out of place as it is being put into the kiln.

When the design is satisfactory the piece is placed in the kiln for firing.

With a short firing the threads will remain in relief from the background. One possible snag, however, is that the threads may crack off in the cooling process.

With a normal firing threads will flatten and with a longer firing they will spread. It is necessary to keep an eye on the piece in order to obtain the desired result. Once you are used to working with threads you can achieve some interesting effects by firing one pattern and then placing more threads on top and refiring: you will have a partly flat and partly raised design.

Lump decoration

Lumps of enamel in mixed colours, and sizes (up to about 2cm ($\frac{3}{4}$ " across), are

Pendants and brooches decorated by embedding small metal objects and copper wire, using threads and lumps of enamel. Designers: Phoebe Douglas and Betty Grocock.

This chapter explains some more of the decorating techniques which can be used when enamelling. These are the use of enamel threads, lumps or chips and simple embedding using copper wire, jump rings, odd pieces of enamel and even small nails.

Thread enamel

Threads of enamel, or thin rods, sometimes called enamel strings, come in a variety of colours. They are a fascinating medium for decoration.

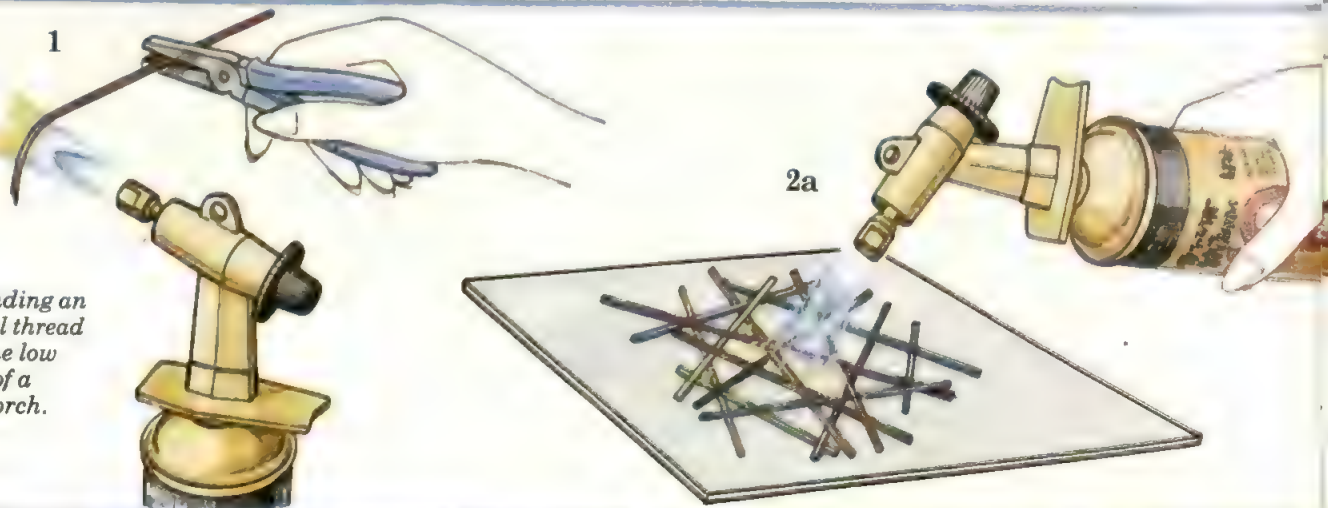
The piece to be decorated is first counter-enamelled and then given a base coat of enamel in the usual way.

Next a thin layer of enamel powder is sifted on to the item and the threads arranged on this using tweezers to place threads exactly where they are wanted.

1

1. Bending an enamel thread over the low flame of a blow torch.

2a



recently available from craft suppliers. It is a simple way of obtaining a very satisfying result, giving the effect of pools of contrasting or harmonizing colours on a plain background. You can use as few—perhaps just one—or as many colours as you wish.

Prepare the blank as for thread decoration.

It is advisable to dust a thin second coat of enamel, the same colour as the first, on to your pre-fired piece before placing the lumps in position. This prevents them from sliding about on the shiny enamelled surface when the piece is being placed in the kiln.

It is best to choose similar sized pieces when planning a design as large lumps will take longer to fire than small ones. As with threads, by varying the length of firing time you can have either raised areas of colour or a completely flat surface.

Two or three lumps placed close together will fuse as they melt, and by careful placing of the lumps pleasing flower designs can be made.

Shot enamel is similar to lump, but it is smaller in size.

Embedding

Yet another simple way of decorating an enamelled item is by embedding small metal objects. Small circles and squares of copper can be bought, but for a truly original touch use bits and pieces, such as jump rings, links from a chain, small nails and copper wire.

Wire can be coiled and bent easily to make initials or personal emblems. The wire should then be thoroughly cleaned with emery paper as there is a natural lacquer on the wire which may prevent it from fusing with the enamel if you do not clean it.

Counter enamel and then enamel the top surface of your piece. Next dust on a second coat of the same colour. Place the pieces of metal in position with tweezers and refire.



Steve Bicknell

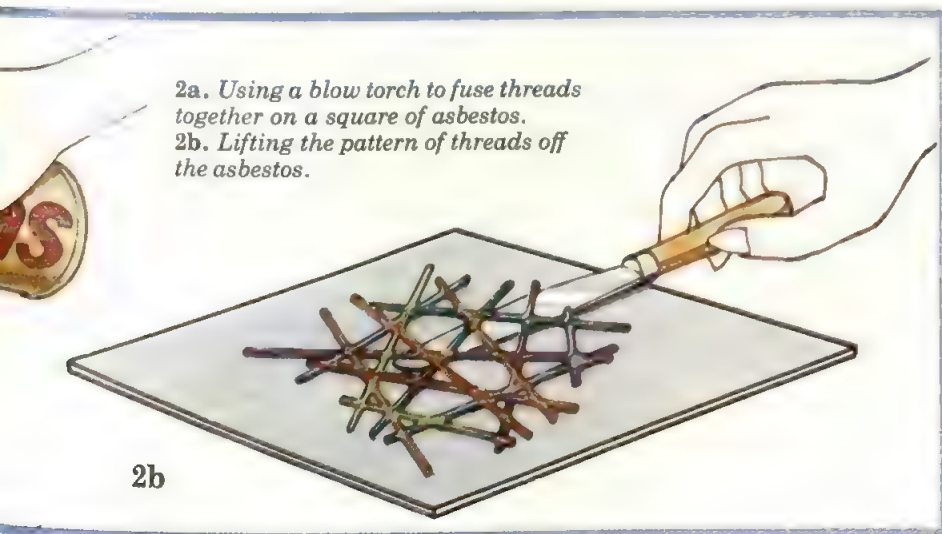
General hints

Quickly-made 'finding'

By now you have probably made several attractive enamelled pieces. Maybe there is one piece which you would like to make into a pendant but it has no hole for a chain or thong. To remedy this, take a piece of copper wire about 10cm (4") long and coil each end tightly with a pair of pliers—one end one way and one the other way leaving a length of wire in between the two coils (fig.3a). Bend the wire in half so that the two

The flower design on this brooch was achieved by the careful choosing and placing of lumps of enamel.
Designer: Betty Grocock.

coils are flat against each other (fig.3b). Slip the piece of enamel in between the coils, hold it tightly in place with one hand and twist the loop with the other (fig.4). The wire itself will indicate the direction of the twist. Glue into place with a quick-setting, strong adhesive, such as Araldite Rapid.



2a. Using a blow torch to fuse threads together on a square of asbestos.
2b. Lifting the pattern of threads off the asbestos.



3 and 4. Making a 'finding' from copper wire.

Paul Williams

A block for each colour

Colour —
printing 12

Designing for lino printing

The elements to exploit in lino printing are those which are special to the medium—a somewhat brash quality and a simplicity of line and colour. Therefore, you should look for inspiration either in other designs and patterns that contain these qualities already or adapt existing ones to suit them.

The craft of lino printing, like most forms of printmaking, draws heavily on other graphics for ideas—oils, watercolours, sketches—but these should never be slavishly imitated or they will almost certainly end as failures. It is necessary to reinterpret designs and in the process you become increasingly familiar with the qualities that are special to the lino medium as well as those peculiar to the medium which is your source of inspiration.

Choosing colours

Whether you choose to work with printing water colours or oil bound inks depends somewhat on the effect you want.

Printing watercolours have a slightly velvety quality all their own and the print overleaf was made with them. **Oil bound inks** offer greater versatility because they are, in some cases, transparent and can therefore be overprinted effectively.

Different colours of inks and even different brands of the same colour vary in degrees of transparency and, consequently, of covering powers. Printing one colour over another may cause them to change, blue over yellow may become green, for example.

Therefore, when you are planning your colour scheme it is always wise to try any colours that will be overprinted by making a dab on paper and then dabbing over it with the second colour when it is dry.

A special reducing medium, sometimes called extender base, will increase the lightness and transparency of oil bound inks (adding white will lighten them too, of course). When using reducing medium (or white) squeeze it out first and then gradually add the colour to it. This way you will arrive at the correct shade more quickly and with less wastage.

Printing from separate blocks

In the previous chapter on lino cuts the print of the house and garden was made by cutting away more and more of the same block for each different colour. A more versatile way of making a multi-coloured print is to cut a different block for each colour. This way you can continue to make prints indefinitely since the blocks are not altered at each stage. Also, it is possible to try more adaptations as it is easier to recut a stage but all blocks must be the same size.

Preliminary designs. When printing in more than one colour you must always figure out before you begin what information will be on each block. This is easier to do than it seems and can be simply worked out on preliminary sketches.

Sketch your complete design in colour, then using sheets of thin tracing paper overlay them one at a time on to the design and make up a different sheet for each colour. The information on each sheet can then be transferred to a separate lino block.

Offset cutting. When cutting more than one block you can also transfer the design by the offset method.

This means cutting the block with the most information on it first and printing it in black on to a sheet of paper. Then, while the ink is still wet, print the wet paper on to one of the other blocks, making sure to line up the edges of the print accurately with the edges of the new block of lino.

This will give you the information on block number two that is engraved on block number one. You can then either trace the additional information you need or cut the areas freehand. If there is a third or a fourth colour these can be treated in the same way, by transferring the information from the previous blocks.

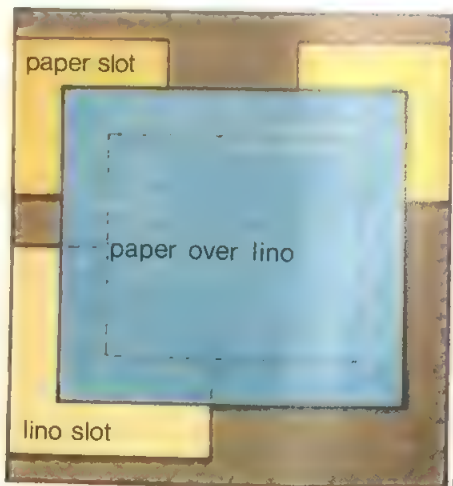
Lining up. In the case of the house and garden print previously described in Printing chapter 11, page 886, the print registration (fitting of the different colours together on the print) was done by lining up the edges of the second block with the edges of the first colour print but for more advanced work the following is recommended.

Use a piece of stiff cardboard or hardboard as a base or backing. Cut out an accurate, right-angled, L-shaped piece of hardboard and stick this to the lower left hand corner of the baseboard. This card must not be thicker than your lino. The inked blocks will be placed one at a time in this corner and the paper lowered over them to print (fig.1).

(When printing from more than one block it does not matter in which order you print. But it is most important that each block is aligned properly.) Now cut smaller L-shapes for the paper. Since the paper is always somewhat larger than the block it needs a different guide to slot the paper in. Decide where the top of the paper will come to, then stick the L-shapes into place (fig.1b). The paper can then be lowered from this position each time you print



1a Secure each block for printing by attaching L-shaped holder to baseboard.



1b. L-shaped markers at the top of the base hold paper in the right place when it is lowered on the lino block to print.

Right: the orange prints show the information on each printing block. It is all combined to make the final print. At the bottom this design is printed in different colour schemes to vary the effect. Design is by Barbara Pegg.





and you can be assured of its falling into the correct position

Cauliflower print

The cauliflower print and painting shown here are excellent examples of how an image must be translated to suit the medium you are using. The print is derived from the oil painting yet it looks quite different. Both look different from a real cauliflower and this is as it should be because both are interpretations. The chunkiness of the wooden board and the swirling, tree-like shapes of the cauliflower are conveyed in the way that each medium can best express it.

Remember that in lino cuts you are working with a gouge and the result is clear, strong definition of lines and flat expanses of colour. You cannot get the subtle nuances of shading and special textures of paint possible with oils and therefore the same image in two different mediums must express 'cauliflowerness' in different ways. Instructions are given below on how to make the cauliflower print shown but you may prefer to study the oil painting or a real cauliflower and adapt the design to incorporate your own ideas.

You will need:

Enough lino for 4 blocks (measuring 26.5cm x 37cm (10½" x 14½")).
Lino cutters.
Craft knife.
Tracing paper, graph paper.
Indian ink.
Sheets of cartridge paper for prints.



Oil painting of cauliflower on a cutting board by Janet Allen.

Printing water colours in yellow ochre, purple, lilac and black.
Printing roller and slab.
Printing press or burnishing tool.
Lining-up board as described above (optional).

Cut 4 lino blocks to measure 26.5cm x 37cm (10½" x 14½") each.

Cut paper slightly larger than blocks to give a margin. You will need some extra sheets for making samples.

Enlarge the pattern on graph paper (fig.2) and trace the areas for each colour on to each block or use the offset method described above, in which case you must cut the black block first as it carries most of the information.

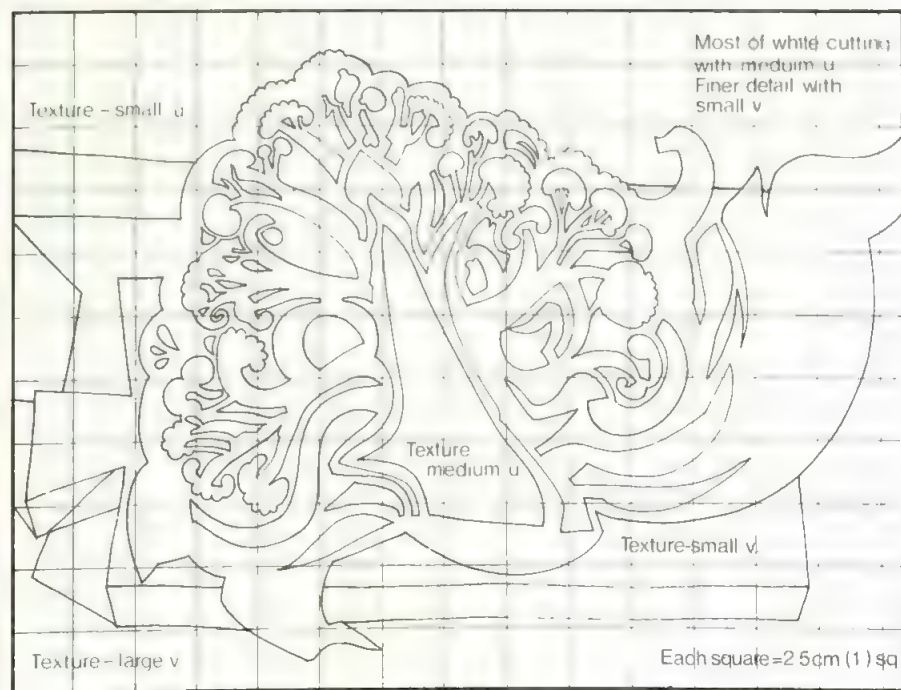
Proceed to cut, following the indications of which gouges to use shown on the pattern.

Remember that when you are ready to print it doesn't matter which colour you print first.

□ Line up the paper and block and print by pressing or burnishing as described in Printing chapter 9, page 828.

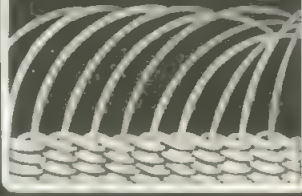
Left: cauliflower print made from lino blocks and inspired by the oil painting shown upper right. By Janet Allen.

2. Graph pattern and cutting guide for linocut opposite.



**Packing,
plaiting and
chain pairing**

Basketry 6



A very pleasant way of learning new basketry techniques is to make the doll's cradle illustrated. The base for the cradle can be made exactly like the oval base described in Basketry chapter 5, page 724 or you can alter it and learn a new technique.

The new techniques in this chapter are chain pairing, plait borders and packing. The chain pairing on the base is not essential but it is attractive and not at all difficult. The plaited border looks difficult but follow the instructions carefully and you will get it right the first time. Packing means building up one side of a basket so that it is higher than the rest.

The cradle

The cradle is 30cm (11½") high and 37cm (14½") long. The rockers are not essential so if you can't work with wood don't let it put you off making the cradle.

You will need:

Tools and techniques as for previous basketry chapters.

57gm (2oz) No.13 (4mm) cane.

170gm (6oz) No.10 (3.35mm) cane.

57gm (2oz) No.5 (2.5mm) cane.

170gm (6oz) No.6 (2.6mm) cane.

No.6 (2.6mm) chair seating cane 1.83m (2yd), long.

For the rockers:

2 pieces of softwood 50mm x 25mm (2"x 1"), 28cm (11") long—optional.

4 No.10 brass screws 25mm (1") long with washers or screw cups to attach rockers to basket.

Surform tool to shape rockers.

Saw and fine grade glasspaper.

□ Cut 3 sticks 33cm (13") long and 8 sticks 23cm (9") long, all from No.13 (4mm) cane, to make the base.

□ Pierce and thread the sticks and wrap with chair seating cane as shown in Basketry chapter 5, page 724.

Chain pairing

To prevent oval work from twisting, an equal number of pairing and reverse pairing rounds are put on the base. If these techniques are used on alternate rows they form a chain pattern.

□ Working from a long end pair with No.5 (2.5mm) cane for half a round only.

□ Loop a second weaver round next stick beyond the pairing and reverse pair until you reach the pairing weavers.

□ Drop the reverse pairing weavers and continue pairing with the pairing weavers until you reach the reverse pairing weavers again. Continue in this way, alternating the pairs of weavers, and never letting either pair overtake the other. Keep the reverse pairing

weavers at the back of the work and the pairing weavers to the front.

□ Open all the sticks to singles on the third round and make the base slightly concave.

□ Continue chain pairing until the work measures 19cm x 30.5cm (7½" x 12").

□ Trim surplus weavers and sticks.

□ For the upsetting you will need 31 stakes of No.10 (3.35mm) cane. These will differ in length. Half the number, say 15, must be shorter and will go round the foot of the cradle—cut these 51cm (20") long. The longer ones, the remaining 16, go round the hood and must gradually increase in length. Cut 2 lengths of each starting at 53.5cm (21") and then in increments of 2.5cm (1"). The length of these stakes varies according to how high and how far over you want the hood to be.

□ Point one end of each stake and insert the pointed ends into the base. Make sure that the slight dome on the base will be inside the basket. Be careful to keep the longer ones together at one end and in the correct order and position for the hood.

□ Nip each stake close to the base pairing, so that they bend up easily without cracking.

□ Tie the stakes together in two bunches—one bunch at the foot and the other at the head. This is to make the upsetting easier and to avoid distorting the base.

□ Insert 4 weavers of No.6 (2.6mm) cane into the base and do a 4-rod wale for one round. Change to a 3-rod wale for 5 rounds remembering to step-up on each round.

□ Cut 31 bye-stakes of No.10 (3.35mm) cane, half of them 13cm (5") long and half gradually increasing, as for the stakes, to a maximum of 28cm (11").

□ Point one end of each and insert the pointed ends into the waling of the upsetting, one beside, and to the right, of each stake. Keep the longest bye-stake beside the longest stake etc, in order, all the way round.

□ Rand with No.6 (2.6mm) cane for 5cm (2"). Allow the sides to flow out a little and the ends slightly more.

□ Using No.6 (2.6mm) cane put on two rounds of 3-rod waling.

Packing—this is done to make the hood.

□ Start randing with No.6 (2.6mm) cane, at the head of the cradle and weave to the right until you reach the middle of the side.

□ Turn the weaver right round the next stake and weave back towards the head, all the way round, until you reach the middle of the other side.

□ Turn the weaver right round the next stake so that it is facing the head end again.

□ Continue randing to the other side



Barbara Maynard

1. To make the hood one side of the basket is packed. A weaver is taken round a decreasing number of stakes.

to one stake less than on the previous round.

□ Turn the weaver round again and weave to the other side, again to one stake less than on previous round (fig. 1).

□ Repeat this weaving backwards and forwards going round one stake less each time on both sides so that the head end grows higher. Push the stakes forwards as you weave to form the hood.

□ Continue until you are turning the weaver round the two longest stakes. Leave the weaver on the inside of the work.

□ Using No.6 (2.6mm) cane wale for two rounds all the way round the cradle and then repeat the packing procedure exactly as before. (For a bigger hood you can repeat the packing process a third time if you wish.)

□ Finally put on two more rounds of waling using No.6 (2.6mm) cane.

□ Trim any surplus *bye-stakes* and weavers—not the stakes.

You can now complete the cradle with a 3-rod border if you wish but a plait border is more decorative.

Plait border

Keep the work well soaked and if you make a mistake don't be discouraged, undo the work and try again, the result is well worth the effort.

□ Using No.10 (3.35mm) cane cut 3 pieces 26cm (10") long and 2 pieces 7.5cm (3") long. The long canes are substitute stakes and will be replaced by the real ones at the end. The short canes are merely cushions so that the first canes are not bent down too low and will allow space to thread the last stakes under these 'elbows' at the end of the border.

□ Nip all the stakes 6mm (¼") above the waling so that they bend over easily to the right.

□ Starting at the foot end (the easiest place) place one of the 7.5cm (3") canes against a stake at right angles to the waling and bend the first stake down to the front over it. Place a 26cm (10") substitute cane alongside the stake. Leave 5cm (2") sticking into the inside.

□ Repeat with the other 7.5cm (3") cane against the next stake to the right and bend that stake down over it and

This cradle with its plait border involves new techniques and careful weaving. Designer Barbara Maynard.

place the second substitute cane behind it (fig.2).

Take the first left hand pair over the second pair and in between the next two upright stakes, into the centre of the basket. Bend the third stake down to the front over this pair and place the third substitute cane beside and alongside this stake (fig.3).

Take the second pair over the third pair and between the next two upright stakes into the centre. Bend the fourth stake down to the front (fig.4). Bring the left hand pair on the inside of the work back to the front to lie beside, but behind, the stake you have just bent down (fig.5).

Repeat the last stroke with the third pair and once again the inside left hand pair is brought out to lie beside and behind the fifth stake (fig.6).

From now on you will have 2 pairs on the inside. Always bring the left hand one out, after you have turned down the next stake. At the same time you will have 2 sets of 3 canes to the front. Counting these canes from the right, take the 5th and 6th cane each time, to the inside of the basket, in between the next two upright stakes, and over the top of the first 4 canes lying at the front.

Say to yourself, 'five and six go in, next stake down and left hand pair comes out'. If it goes wrong and you suddenly have a cane that is too short to complete its stroke, it is because you have twisted the canes round as you passed them in or out of the basket.

Repeat all the way round making sure that you turn each stake down close to the waling. Don't leave gaps between the border and the waling. Continue until you have bent the last stake down and the left hand inside pair comes out.

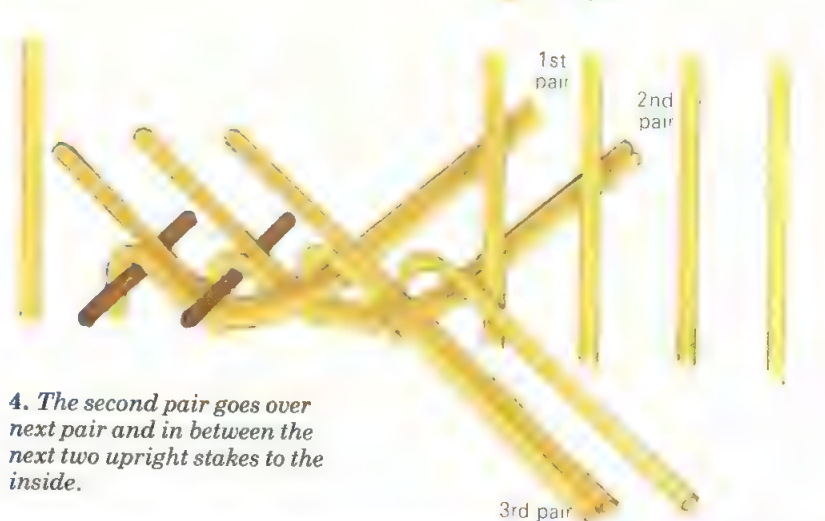
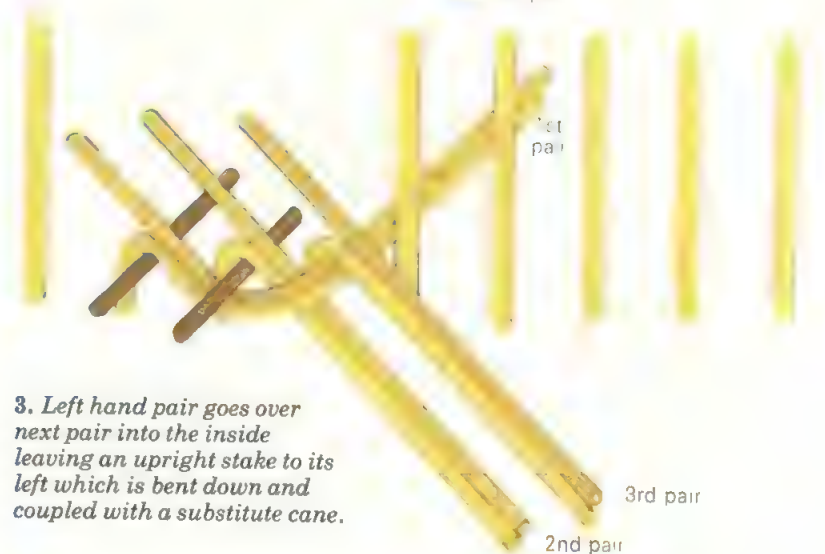
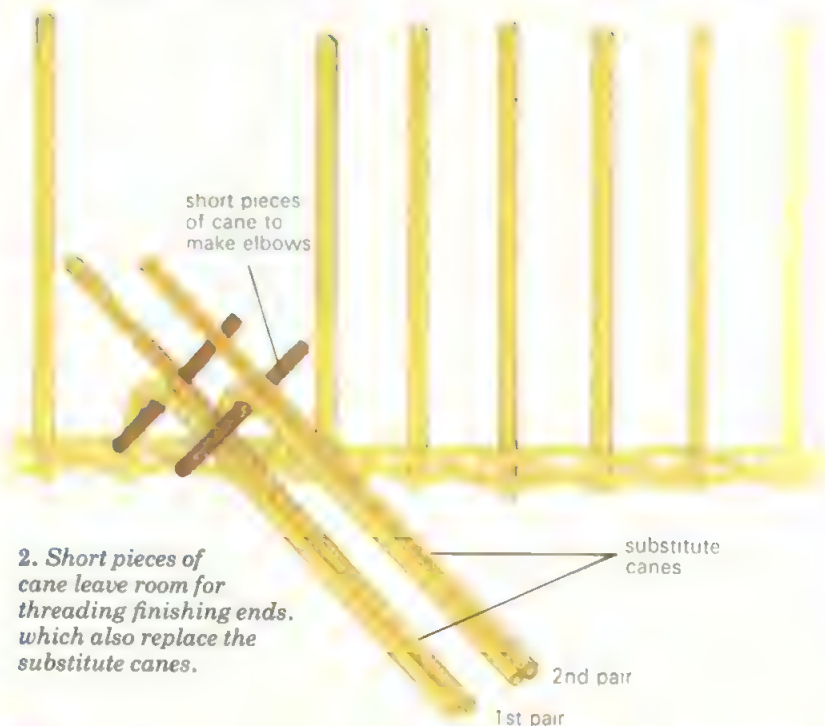
To finish the border remove the first 7.5cm (3") cane (if it has not already fallen out) and thread the fifth and sixth cane from the right under the elbow of the second stake (fig.7).

There are now 3 pairs on the inside—a long cane and a short cane to each pair. Each of the right hand canes (the long ones) is the real stake that is to replace each of the substitute ones. Keep them in the right order.

Remove the left hand or first substitute cane bit by bit and weave the real cane into its place. Don't remove so much of the substitute cane at any one time that you lose the place where the real one goes (fig.8).

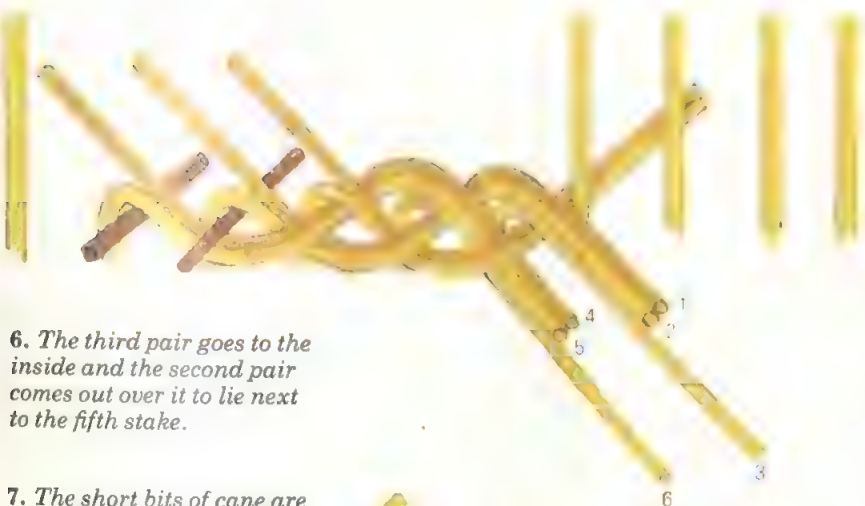
Repeat this with the centre and remaining right hand canes.

Now you have three odd canes on the inside of the basket. Thread each of these canes one 'plait' to the right and through the border to the front. The plaited border will now look continuous all the way round.



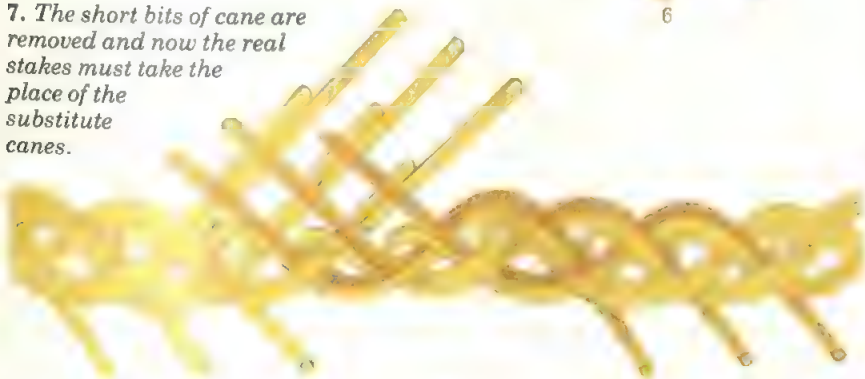


5. The first pair goes over the second pair on its way to the front to lie next to the fourth stake.

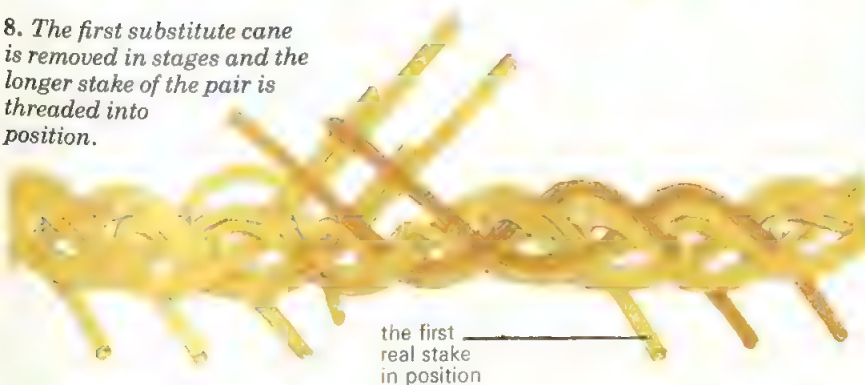


6. The third pair goes to the inside and the second pair comes out over it to lie next to the fifth stake.

7. The short bits of cane are removed and now the real stakes must take the place of the substitute canes.



8. The first substitute cane is removed in stages and the longer stake of the pair is threaded into position.



the first real stake in position



Rockers attached to bottom of cradle.

☐ Trim off the ends of the canes as close to the plait as possible.
To make the rockers saw the 2 pieces of wood with a diagonal cut at each end as shown (fig.9).

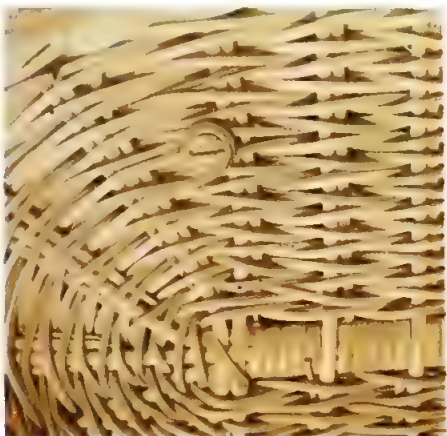


Linda Palmer

9 Diagonal saw cuts remove most of the waste. Corners are filed round.

- ☐ Round the corners off with a Surform.
- ☐ Smooth the curve with fine glass-paper.
- ☐ Decide on exactly the right position for the rockers and the screws to be attached to the cradle. For the screws gouge holes 8.5cm (3½") from each end of each rocker, on the upper flat surface, with a bodkin or a bradawl.
- ☐ Varnish the rockers.
- ☐ Push the screws through the screw cups or washers and then through the base weaving so that they match the holes in the rockers. Be careful not to split any of the base sticks or weavers with the screws.
- ☐ Tighten the screws to secure the rockers in position.

Screws pass between canes into rocker.



Melvin Grey

How to model sheet copper



Modelling thin copper sheet is an ancient oriental craft. For centuries copper has been used to decorate surfaces—even covering whole walls. Pictures, wall panels, fire screens and jewel boxes can be decorated with copper. The completed items look very solid but in fact a very thin sheet of copper is used and then mounted on to a base board.

The effects can be varied, for example you may cover a cigar box and oxidize the copper to give it an antique finish or, for a wall panel, you can leave it fairly bright. Another idea is to use metal blanks (as for the blanks used in enamelling), and cover them with the modelled copper to form jewelry. You can make labels for decanters similarly. The technique does not involve hammers at all. The design is traced on to the face of the copper and then modelled from the back. The indentations are then filled and the facing surface is polished to complete the object. No anvils are required and it can be done on any firm flat surface—the kitchen table will do.

The copper sheeting can be obtained in various sizes. Craft stores will be able to supply the necessary tools. You can use a kit if you prefer or buy only what you need if you already have some equipment.

The copper sheet is very thin and fairly

soft so do not be misled by the solid metallic appearance. Be careful when handling the copper as it creases and dents very easily. The marks are impossible to remove and will spoil the end result.

A dead ball point pen or a knitting needle, with not too sharp a point, is used to trace the outline of the design on to the face of the copper.

The copper is placed on the work table on a soft surface such as a folded towel, an old bath mat or piece of foam rubber of similar thickness.

The modelling is done from the back of the copper with various spatulas or modelling tools. Here you can improvise; the handle of a teaspoon or knife can be used but the disadvantage is that the grip is not comfortable unless you wrap the tool with a piece of cloth and masking tape so that it fits comfortably in your hand—it is held like a pencil but requires more pressure.

A filler is used in the indentations so that the copper will not dent once the design has been completed. There is a variety of suitable fillers. Use whatever you have to hand or what is economical; candle wax, beeswax, wall filler and clear-cast embedding resin with hardener are all suitable fillers. Any of these can be used for flat surfaces but if a slightly curved surface, such as a label for a decanter,

is being made use beeswax as it will not crack or break when curved. It is melted and poured into the indentations before the metal is curved. Once the wax has set the label can be curved gently with the fingers.

Oxidizing. The copper can be given an antique appearance by applying an oxidizing agent sometimes called copper patina. You can buy it from craft stores or mix your own by adding six parts of water to one part of potassium sulphide from chemists.

Technique. Practise on a piece of scrap copper before actually making up a design. On a small piece of copper draw a circle with a dead ball point pen. Turn the copper over and draw another line as close as possible to, and within, the circle.

Place the copper on a towel or old bath mat with the second line you drew facing upwards. Use a modelling tool and push it gently backwards and forwards using short strokes within the circle. Turn the copper over and check your results. Do it evenly so that the surface does not have bumps or mounds. You can continue until the copper becomes thin. You will soon get the 'feel' of it and if the copper does tear it will give you a guide as to how much you can force the copper out and will prevent you from doing it when making up a design.

Designs. Any picture will do—from vintage cars to abstract motifs of your own choice. Draw full size designs on to paper (or trace them) and mark in any necessary detail.

A wall panel

The panel is 20cm x 15cm (8"x6") and mounted on a base. The frame is optional.

You will need:

Suitable design on tracing paper.

Dead ball point pen or knitting needle.

Modelling tools.

Copper sheet .13mm (gauge No.35), 22cm x 17cm (8½"x6½")—any copper around this thickness will do. Craft stores often refer to it as .0056".

Masking tape or equivalent.

Filler—any of the above mentioned will do.

Base board such as chipboard or plywood, 20cm x 15cm (8"x6"), 6mm (¼") thick. The copper is larger than the base board so that the sides can be folded around the base board to hide it.

Potassium sulphide—optional—to give the copper an antique appearance.

Methylated spirit or acetone (optional).

All-purpose adhesive.

Lacquer or clear varnish—optional—to seal the copper surface and prevent

The fire screen is made from a thin sheet of copper which has been tooled and mounted on to a hardboard base.





Trevor Lawrence

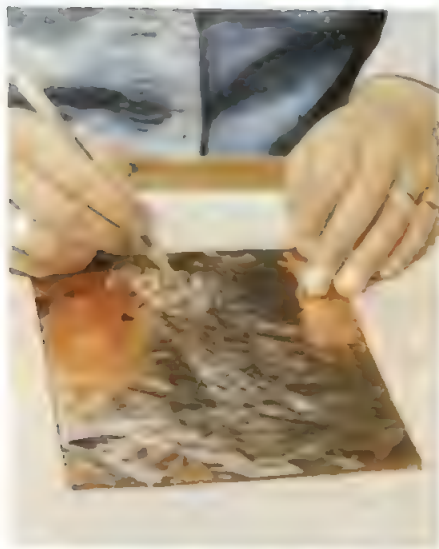
Above: trace pattern used for making one of the soldiers illustrated.
 Right: the completed copper panels make attractive wall decorations.
 Below: the first step in making the panel is transferring the design.



Dick Miller



Melvin Grey



The outline is repeated on wrong side of copper just inside original design.



The modelling or tooling is done from the back using a wooden spatula.



The outline is repeated as the copper is shaped to prevent it from buckling.

it from discolouring. Metal polish.

Piece of glass or old tile to work on.

Cover the work surface with paper. Place the more attractive surface of the copper facing upwards. Use masking tape to hold the design on the copper in position.

Using the dead ball point pen trace over the design. Keep the pressure even and make sure to go over all the lines making up the design.

Lift the copper and look at the back of it to see that the design is complete and that the lines are even.

Remove the design from the copper and lay the copper face downwards. Now draw the design on the wrong side just inside the lines of the design, but around the main outline only. Look at the facing side of the copper and you will see that the design is now slightly raised.

Place the copper, face downwards on a soft surface, such as a folded towel or a bath mat. Use a modelling tool and start to press the copper down with firm strokes, moving the tool backwards and forwards. Work evenly all over the design but within the sections of the pattern.

Some parts need to be pushed out more than others. Turn the copper over and check your results. Continue until you get the desired effect. You will develop a 'feel' for the copper and know when it is getting thin—do not push it out too much or the copper will tear. Once the copper has been pushed out, it is impossible to push it back so try not to make any mistakes. Work in stages and check your results as you progress.

Turn the completed design face upwards on your working surface without the towel. Go over the exact outline firmly with the ball point pen. (This will prevent the metal from buckling and keep the design flat.) Do this carefully turning the copper as required so that you can reach the outline without putting any pressure on the shaped copper. Make sure the surface on which you are working is quite flat. (A piece of glass or an old tile is ideal for this.)

Add more detail, if necessary by working on the towel again. Once you have finished go over the outline as before. This is important as it keeps the work absolutely flat which is necessary to mount the copper on to the base.

Once the design is complete the indentations must be filled to protect them from possible dents. Use a filler of your choice.

If you are using wax melt it and then carefully pour it into the recesses. Once it has hardened you can scrape off any excess or spilt wax with a knife.

If you are using another type of filler, work neatly and make sure there is no filler spilt on the copper outside the

as it will show on the completed surface. Resin takes a while to set hard but the results are excellent—so place it in an airing cupboard and be patient until it is absolutely hard. The tacky resin surface is also a good adhesive when you mount the copper.

Once the filler is dry spread glue over the entire back surface of the copper including the filler. Apply glue to one side of the base board.

Place the copper on to the glued surface of the base board. Make sure it is in the correct position and gently push the copper down. Work from the area around the design towards the outer edges of the copper.

Go over the outline again to make sure that it is quite flat. Using scissors cut the corners of the copper where it overhangs the base board and fold the copper down as close to the edge of the base board as possible.

You can leave the background as it is or use a metal knitting needle to make indentations, at random, all over or starting from the design and decreasing the texturing as you work away from it. Another method of decorating the background is to use the round head of a hammer and to lightly beat the metal. Be very careful when doing this so that you do not damage any of the raised surfaces.

□ Clean the surface with metal polish. Do this a number of times if necessary until the metal is very shiny.

□ To darken the copper—for an antique appearance—use the potassium sulphide. Mix 1 teaspoon of potassium sulphide with 6 tablespoons of water. This mixture is hard on the hands so protect them with rubber gloves.

The copper surface must be free of grease to make this successful so wipe the surface with methylated spirits or acetone before applying the patina.

□ Apply the mixture to the copper with a piece of cottonwool. Do it evenly until the copper is completely black. Wipe off any excess liquid.

□ Use a small amount of metal polish and start polishing the surface concentrating on the pushed out parts of the copper. This will highlight the design. The copper will start returning to its original colour. Continue this polishing until only the recessed parts are left dark.

If you are not happy with your result you can darken the surface again and start over until the right effect is achieved.

□ To protect the surface and to prevent it from discolouring apply a coat of lacquer or varnish to the design. If you do not do this the copper will discolour and need repolishing.

The design can now be framed, or hung as it is if the sides have been neatly folded back.



To prevent the shaped copper from being damaged a filler is used to fill the recessed areas at the back. The back must be flat when completed.



Once the filler is dry the entire back of copper is glued and placed on base.



The background is decorated by a series of random dots around the design.



Oxidizing agent blackens the copper.



Metal polish highlights raised areas.

Proportion, size and shape



Proportion means that one object is the right size—in height and width—to another object. Or it could mean that the different parts of the same object are in the right relationship to each other, eg a hat is the right size for both the dress and the person who is wearing it, or a door is the right size for a particular house. A child's drawing, as in fig.1, is quite out of proportion, however delightful it may be. The figure in the picture is too large for the house, and the sun dominates the sky more than it should.

What happens when you look at a classical building, for example, or even an ordinary object such as a teapot? The columns of the building will need

to be in proportion to the steps and the walls, and the spout of the teapot will need to be in proportion to the rest of the teapot. The handle must also be in proportion, neither too large nor too small, and the right size for the human hand (fig.2).

Another example of proportion is the relationship between a pot and its plant. Which of the three pots in fig.3 is the right size for the plant?

The same principles apply in your craft work. If you are building a chest of drawers, for example, each drawer must be in proportion to the whole, the right size for the things it will eventually contain and for the room it is going into. The same thing applies to any

craft designs. Getting the proportion right is partly a matter of common sense (does it work and is it practical?) and partly a feeling for harmony (is it pleasing as a whole?).

Experiment

(See fig.4.)

This is a very simple experiment to show you how the size and shape of any object can be altered to suit its environment.

You will need:

Two pieces of white paper, 7.5cm x 10cm (3" x 4"), and a pencil.

Lay down one piece of paper so that the long sides are horizontal and draw anything you please such as a flower or a toy engine or a basket. Keep the design simple and to a size and shape which feels harmonious.

Turn the second piece of paper the other way so that the short sides are horizontal and draw the same design as before. Notice what happens when you reverse the height and width of the paper in this way. In order to keep the design in proportion to the sheet of paper you will need to make it taller and thinner and position it differently on the paper.



2

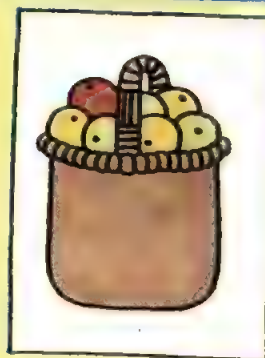


1. A child's drawing has little sense of proportion. 2. One teapot is in proportion; the second would be virtually impossible to use as well as being ugly. 3. Fit the right pot to the plant. 4. Each basket is in proportion to its surroundings—the sheet of paper.

3



4



Creative ideas 33

If you are keen on needlepoint and especially if you enjoy experimenting with the way the rich colours of the wool combine to create subtle, exquisite patterns, then you should definitely turn your creativity to making a few of these elegant box pin cushions.

Quite apart from the delicate combinations of colour, the fact that each side has a different motif contributes greatly to the interest, making each cushion something special.

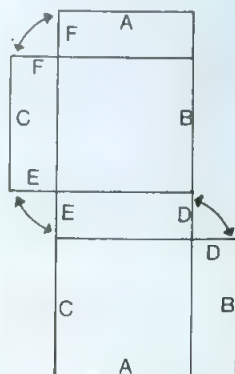
The cushions have been worked in simple cross-stitch on Penelope double canvas with 10 holes to 2.5cm (1"), using leftover lengths of tapestry wool.

Following the diagram draw the shape of the box using graph paper with a number of squares corresponding to holes of canvas. Work out a chart for the needlepoint making each square represent one stitch.

Work the design from this, and then cut away excess canvas leaving at least 1.5cm (½") of unworked canvas around edges.

Now turn under raw canvas right up to stitching and then oversew edges together sewing sides A to A, B to B etc.

Leave one side open, stuff firmly with sawdust or kapok. Oversew remaining side to close.



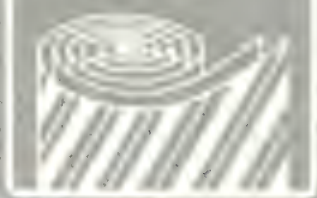
To make a pattern enlarge this diagram.

Practise your needlepoint techniques and experiment with colour combinations by making a few of these small, simple box pin cushions, designed by Pam Swan.



Making scenic silhouettes

Paper 25



Although the word silhouette is synonymous with profile portraiture in people's minds, the art of the silhouette has always extended into other fields. Switzerland was particularly rich in craftsmen who cut delightful rural landscape scenes with animals out of black paper, and Johann Jakob Hauswirth's beautifully composed silhouettes with emphasis on bird, flower and tree motifs are justly famous.

You don't need a model for landscape silhouettes. You just draw freehand—or trace from a book—the outlines of animals, birds, trees, flowers, figures and buildings.

Use them singly (the cut-out figures produced by the concertina fold technique described in Paper chapter 20, page 730 are, in fact, one-motif silhouettes). Or group several together to form an attractive composition.

Even the simplest silhouette can make a charming decoration and, if cleverly used, it could be exciting too. For example, a baby's nursery could be made very special by using a brightly coloured one-motif animal silhouette as a frieze to decorate a cot, and as a surprise repeat on a lampshade.

Lampshade decoration certainly provides a really spectacular means of showing off a silhouette. Hidden inside the shade, the silhouette is unseen by day and springs into view only when the light is switched on.

For greatest impact the silhouette should be totally concealed when the light is off (this is achieved by sandwicheing it between a thickish shade and a lining card) and brilliantly visible when illuminated. Obviously the more bold and colourful your silhouette, the more dramatic its sudden appearance will be.

Types of landscape silhouette

Of the two paper silhouette examples illustrated here, the witch flying on a broomstick is the simpler. It involves one colour only, and the entire composition is cut from one sheet of paper. This means taking care to ensure that each object or motif in the design is joined to the next at some point so that it is one continuous whole. You can see, for example, that each roof is linked to the next; the witch is linked to a roof by her foot, and to the moon by the streamer from her hat. Everything in the photograph of storks interconnects too.

The night townscape silhouette shown on the lampshade uses outline shapes only, but is given additional dimensions by use of several sheets of different coloured paper. Each object or motif is cut separately, then grouped (or superimposed) and glued together to form an attractive composition.



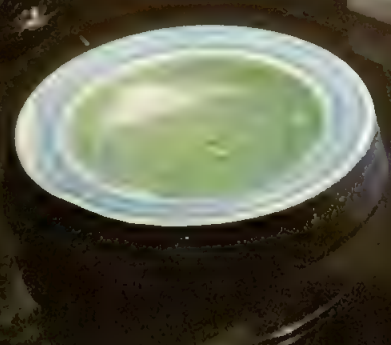
Below: silhouette of a witch flying over the rooftops is cut from one sheet of paper. Each motif is linked to another at some point so the entire silhouette holds

together. Above: everything interconnects, too, in this photograph of storks which would make a beautiful paper silhouette.



J. H. H. H.

W. J. H. H. H. H.



Lampshade decoration provides a spectacular means of showing off a silhouette. Hidden inside a plain white shade, the silhouette is unseen by day and springs dramatically into view only when the light is switched on. Designer Caroline Porter.

Choosing silhouette papers

Whichever type of silhouette you decide to make, it's always worth making a sketch on rough paper before measuring up to scale and cutting the design in your chosen (and more expensive) paper.

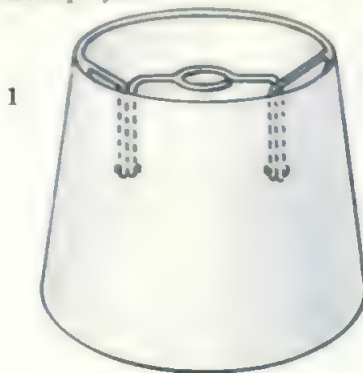
Medium weight papers, such as light-weight cartridge paper, are easy to cut and an excellent choice where dark colours are involved. The thickness of the paper allows little light to permeate and thus helps to retain the solid appearance of dark colours.

This type of paper is a bad choice, however, for bright colours and pastel shades where maximum translucence

is essential to keep colours alive and vibrant. Thick paper has a deadening effect, causing detrimental loss of colour. Choose instead a flimsy paper. Tissue paper is ideal: it is available in a wide range of beautiful colours, and is so thin and crisp that light positively glows through it and intensifies the coloured effect.

Choosing a suitable lampshade

Take time and trouble to select the right lampshade—or all your work could be to no avail! It is vitally important that the shade should be of the correct thickness: thick enough to ensure the silhouette is invisible by day, but not so thick as to prevent it from being clearly visible when the light is on (fig.1). Medium thick card is excellent, and some unlined material shades are suitable, but do check properly by testing with a piece of coloured tissue paper before embarking on the project.



1. Medium thick white card shade with fairly straight sides is ideal for silhouette decoration. Swing gimbal is better than pendant ring fitting as it can be swivelled out of the way for gluing the silhouette inside the shade.

An unpatterned shade is, of course, essential. A plain white shade is preferable as it allows the true colours of your silhouette to show up best, but some pastel coloured shades can be very effective too.

Finally, choose a largish lampshade with fairly straight sides. The bigger it is and the simpler its shape, the easier it is to work on.

A swing gimbal light fitting is better than a hanging fitting as it can be swivelled out of the way when you glue the silhouette into position.

Night townscape lampshade

You will need:

A largish lampshade.

Tissue paper in pale blue, dark blue, pink, yellow, purple.

Black cartridge paper.

Thin white card for lining.

Rough paper and graph paper.

A narrow tube, a little longer than the shade is high (a very thick knitting needle would do.)

Rubber solution adhesive (such as Cow Gum or Gloy Studio Gum).

Scissors and scalpel or sharp cutting knife.

Pencil, tape measure and ruler.

Wooden sprung clothes pegs.

□ Measure the lampshade and make a paper pattern of it as shown left, adding 19mm ($\frac{3}{4}$ " to each arc to allow for circumference overlap.

□ Place the paper pattern inside the lampshade to check the fit then cut your lining card accordingly (fig.2).



2. Lining card and tissue paper sky are cut slightly larger than actual lampshade measurements to allow for circumference overlap. Silhouette composition should not extend into overlap area—which is indicated by dotted line.

The lining card can now be used as the 'canvas' on which to prepare and mount your silhouette.

□ Make a sketch of your composition on rough paper and use this as a map to guide you in cutting and grouping the individual silhouettes into position.

□ Cut the sky from pale blue tissue paper (paper that is graduated through various shades is particularly effective) exactly the same size as the lining card—which could be used as a template.

□ Draw individual foreground buildings and aeroplane shapes on black cartridge paper, and cut them out. Use dark blue tissue paper for the silhouettes of buildings in the distant background.

□ Mark window shapes on the buildings and aeroplanes, and cut out carefully with a scalpel or sharp cutting knife.

□ To make lights in the windows, cut strips of pink, yellow and purple tissue paper, and stick on top of the cut-out window spaces (fig.3). To make varied and stronger window lights, sometimes glue two or more layers of tissue over windows. They can be the same or different colours.

□ Lay the tissue paper sky on a firm, flat surface. Arrange the buildings and aeroplanes on top, following the composition planned in your sketch. The buildings will be positioned so that the strips of window tissue face upwards towards you (fig.4).

□ Using a soft pencil, very carefully

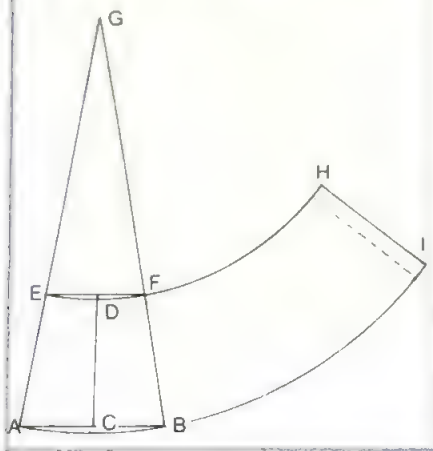
Empire lampshade pattern

If possible, use a really large sheet of squared graph paper for making the pattern because this makes drawing parallel and perpendicular lines much easier than on blank paper.

Near the bottom left-hand corner of the paper, draw a horizontal line (AB) equal in length to the diameter of the bottom ring. Find the centre of the line (C) and draw a perpendicular line upwards from it to the required height of the shade (D).

At D, draw another horizontal line (EF) equal to the diameter of the upper ring and with D as the centre. Join AE and BF and extend these lines upwards until they intersect at G.

Using GE as the radius, draw a large arc from E equal to the circumference of the top ring (the length of the arc can be measured with a piece of string). Then, using GA as the radius, draw another arc from A equal to the circumference of the lower ring. Add 19mm ($\frac{3}{4}$ " to the length of each arc and then join them (HI). Cut round AEHI and this gives the paper pattern.



trace the outline of each building on to the tissue paper sky. No need to bother with the aeroplanes.

Remove the individual silhouettes and cut the traced shapes from the sky, using a scalpel. Cut just inside your pencil lines to ensure there will be no unwanted gaps between sky and buildings when the final jigsaw of silhouettes is assembled.

Spread an even coat of adhesive all over the lining card.

Turn the tissue paper sky over so that the whole composition is reversed, and carefully stick it on to the lining card. This should be done slowly, a few inches at a time, in order to avoid wrinkling or trapped air bubbles. Hold tissue paper with one hand and gently lower, stick and smooth it with the other hand, using a soft cloth or rag.

Now glue the buildings into the jigsaw spaces left for them (fig.5). The correct side of the windows will now be facing upwards. Add aeroplanes.

When the whole silhouette composition has been glued to the lining card, and it has dried thoroughly, it can be stuck to the inside of the lampshade.

Spread adhesive round the top and bottom inside the circumference of the lampshade (fig.6).

Roll the silhouette round a tube. The lining card should face the tube and the silhouette face outwards. Begin by rolling the circumference overlap round the tube (fig.6).

Slowly unroll the silhouette inside the shade, sticking it into position at top and bottom as you go.

Place clothes pegs at regular intervals at top and bottom of shade to hold the silhouette in position while the glue dries.

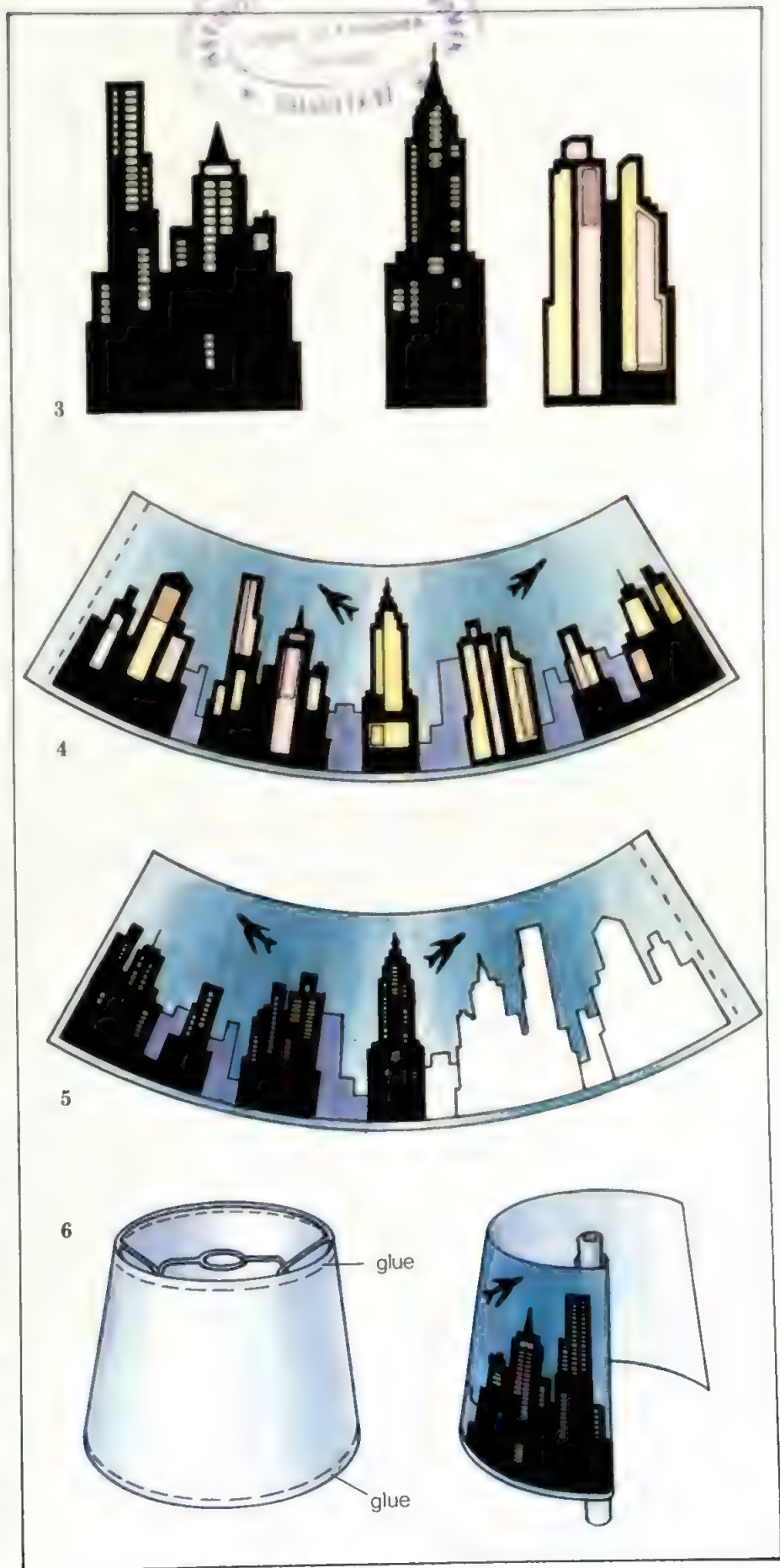
When the silhouette is almost completely unrolled, remove tube. Spread adhesive along circumference overlap, and stick down.

3. Window shapes are cut out of individual buildings with a scalpel. Window lights are then made by gluing one or more strips of coloured tissue over the cut-out window areas.

4. Arrange the individual silhouettes on the tissue paper sky, trace round them with a soft pencil, and carefully cut the 'sky' as marked.

5. The whole composition is reversed when the silhouette is glued on to the lining card. Window lights now appear correctly.

6. Spread adhesive round top and bottom of shade, as indicated by dotted lines. Roll silhouette, lining card facing inwards, round a tube, then stick into position inside the shade.



Slab boxes and marbled clay

Clay 21



The slab technique described in the previous chapter can be developed to make larger vases and boxes.

The method is the same but for bigger pieces you will need to be able to handle large pieces of rolled-out clay without them buckling or warping. When you feel confident that you have mastered the basic techniques, begin to experiment with these larger pieces to give greater height and width to your constructions.

Experiment with shapes

Slab pots need not be square or symmetrical. Try wide, shallow shapes and tall narrow ones. You need not feel limited by the basic box shape either. Slab pots can be triangular, octagonal or even star shaped.

Carefully plan the shape that you want first, then roll out and measure the pieces of slabs that you will need. If you are intending to make a box with more than four sides, you will find that the slabs fit together more easily if you mitre the edges of the upright sides, as described in the technique for making a cylinder (Clay chapter 17, page 762).

Slab boxes

Boxes made in this way have all kinds of uses—make tiny ones for jewelry, large ones for unusual kitchen containers for rice and sugar.

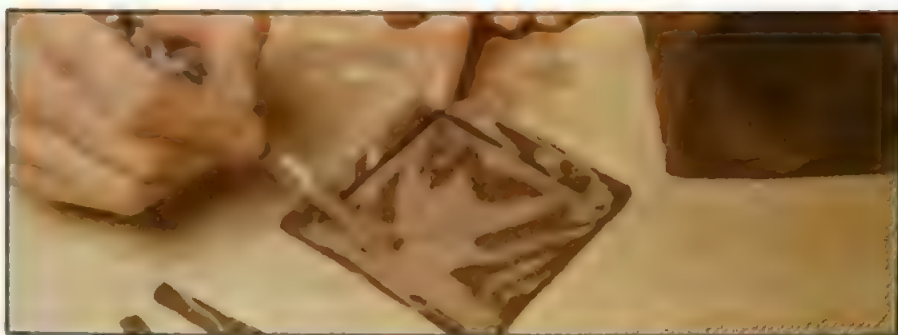
To make a slab box an extra piece of clay is cut so that, instead of five pieces (the base and four sides), a sixth slab is cut to fit the top of the box and form a lid. The lid can be fitted to the box in a variety of ways: choose the one that best suits the shape and intended function of the box.

Flat lid with ridge. Cut the lid slab to exactly the same size as the base. Cut four strips of clay about 7mm ($\frac{1}{4}$ " wide and about 15mm ($\frac{1}{2}$ " shorter than the sides of the box.

Check the width of the box sides, and fix the strips in the usual way slightly more than this distance in from the edges of the lid (fig.1).

Check that the ridge fits neatly inside the box when the lid is in position. There should be a gap of about 3mm ($\frac{1}{8}$ ") between the ridge and the box to allow for shrinkage and the added thickness of a glaze coat (if any). It is worth taking some care at this stage to make sure that any kind of lid fits well. If the distance between the ridge and the edges of the box is too great the lid will slip about, and if it is

Slab boxes in all shapes and sizes designed by Jane Hoyland. The lids, as described here, fit on to the boxes in a variety of ways. Decorative effects include plain glazes, flowers painted on in oxides and a panel of applied, delicately shaped foliage.



1. Flat lid with ridge: fix a little in from the edge of the lid.



2. Trimming a slab: measure inwards and mark the inner area with a knife.



3. Use a cutting wire to slice into the lid, taking away about half the depth.



4. Then tidy up the cut-away area with a knife to give it a smooth finish.

too small the lid may not fit at all after the pot has been fired.

Trimming a slab. Another way to form a lid is to cut a slab slightly thicker than the rest of the box, and then trim away a small area of the underside. Measure about 7mm ($\frac{1}{4}$ " all round in from the edge of the lid and mark it off

with a knife (fig.2). Then, using a cutting wire, slice into the lid to about half its depth along the edges (fig.3). Use a sharp knife to tidy up and trim the cut-away area to the correct depth (fig.4). This will leave a solid piece in the centre of the lid which will just fit inside the box.



5. Lid fitted over box: fix strips in position round the edges of the lid.



6. A complex fitted lid is constructed to fit over a ridge built on the box.

Lid fitted over the box. Alternatively, you may wish to have a lid fitting over the top of the box. Cut out a slab slightly more than 7mm ($\frac{1}{4}$ ") larger all round than the base of the box. Cut strips of clay to fit around the edges of this lid, making them of a depth that is in proportion to the shape of the box.

Fix them in position, and check with special care that there is a tiny gap between the sides of the lid and the sides of the box (fig.5).

Complex fitted lid. The white pot on the previous spread has a lid which fits over a ridge applied to the box (fig.6). A lid is then built in the same way as shown in fig.5 to fit over this ridge, giving a more solid effect to the box.

The lid and the box need to be well proportioned in relation to each other, so judge the shape by eye as you build up the form to make sure that the lid and pot are pleasingly balanced.

Decorating slab vases and boxes

Any of the techniques you have already learnt can be applied to slab vases and boxes.

Additions in relief. As you are building up the box, you could apply a relief landscape to the front surface. Make this from a thin rolled-out slab carved into shape with a scalpel or sharp knife, and fix it to the box in the usual way.

You could then paint the relief area with oxides or colour it with different shades of glaze to emphasize the landscape effect. Be careful not to make the relief clay too thick, or the pot will be out of balance and may distort when fired.

Painted-on designs. The large, smooth areas characteristic of these slab pots are a good base for patterned or floral designs painted on with oxides. Make the patterns bold or delicate to compliment the shape of the box, remembering that oxides give muted, subtle colour effects.

Impressing. You may want to try pressing textured materials into the clay surface before you cut out the slabs, when the clay is still fairly soft. A later chapter deals more fully with this technique, but try pressing a large fern or prominently-veined leaf into the soft clay.

Alternatively, if you roll out the clay slabs on very coarse hessian or canvas, the texture of the material is pressed into the slab and can give a most attractive rustic effect.

Incising should be done when the pieces have been put together and the clay has stiffened.

Carved slabs. Areas can also be cut from the top edges of a pot to give a lacy effect that makes the piece look light and delicate. Keep the carved-out pattern fairly simple, and do the cutting when the clay is fairly stiff, but not so stiff that it cracks as you try to cut it.



Marbling clay

Marbled clay can look particularly effective when used to make a straight, simple shape.

Marbling earthenware clay. Take some red and some white earthenware clays and knead them separately until they are of an even consistency. Then



7. Contrasting clays give a marbled look.



Peter Heinz

take the two lumps and knead the two colours together.

As you knead you will see the marbled clay effect emerging. Do not over-knead the clay, or the colours will merge and you will lose the marbling. Then bang the clay into a block roughly the size and shape of the slabs you want. Slice layers about 7mm ($\frac{1}{4}$ " thick off this block to give workable slabs—as you slice you will expose more of the marbled pattern (fig. 7).

Even out and thin the slabs slightly with a rolling pin, but once again do not roll the clay out too much or you may lose the marbled effect.

Marbling stoneware clay. It is important to use clays that fire at the same temperature, and hold their colour after firing.

If you want to marble stoneware clay, you can do this by adding a staining agent (Clay chapter 3, page 93). Add 10% staining agent to about $\frac{1}{3}$ of the clay you intend to use, kneading it in thoroughly. Then knead the coloured and plain clays together as before.

Glazing marbled clay. If a marbled

slab pot is not intended to hold food or liquid it need not be glazed—and it can look most effective burnished to a subtle shine with the back of a silver spoon or a smooth pebble.

If you do want to glaze marbled clay, remember that heavily coloured or thick opaque glazes will obscure the effect.

A colourless transparent glaze will reproduce the original colours in the clay, and a coloured transparent glaze will modify them. The modification does, of course, depend on the colour of transparent glaze used. A pale matt glaze will soften the clay colours.

Sculptural forms

Once you become aware of the possibilities of slab work and have familiarized yourself with the kind of effects that you can achieve, you may wish to explore the technique beyond the limitations imposed by vases, dishes, boxes and so on.

Many potters use the slab as a basis for sculptural form, creating from it highly individualistic pieces of work that are a

'Chinese junk' is built up from small slabs and strips of clay, carefully joined together. Designed by Terry Bell-Hughes.

long way removed from the simple slab dishes of the preceding chapter.

The basic slab remains the starting point, but it can be built up, carved, shaped, used in conjunction with other techniques, kept starkly simple or made into fantastically elaborate shapes.

With the techniques, both constructional and decorative, that you now have at your command you are ready to develop your ideas—if this is where your inclination leads you—in the direction of realistic or abstract sculptural form. Build and join using the methods you have learnt, watch balance and proportions carefully and make use of colour to heighten the effect you are aiming at.

Later chapters deal in greater detail with advanced sculpting and modelling techniques, but now is the time to begin experimenting with new forms and ideas.

Findings for tumbled stones



The last chapter described how to polish stones by tumbling, and how to bond your polished stones to metal mounts (called findings) to make finished articles of jewelry.

Continuing the theme that your tumbled stones (or bought polished stones) can be made into unique and lovely jewelry without any special knowledge of metal work (Lapidary chapter 2, page 276), this chapter illustrates a representative cross-section of the findings to be found in lapidary and craft shops, and gives advice on deciding which findings are best suited to various sorts of stones.

Most shops sell findings for ear-rings, brooches, bracelets, necklaces, pendants, rings, tie clips and pins, and key rings—almost any jewelry you may want to make—in a variety of designs, sizes and different metals suitable for baroque (irregularly shaped) tumbled and polished stones.

Findings can be small and fine to complement delicate-looking small stones, or big and sturdy for large heavy stones. Styles vary from simple to ornate, and traditional to modern. Simple styles are easier to work on so it's wise to avoid ornate or filigree designs for your first attempt.

There is usually a choice of metals too—and prices vary accordingly. Some metal findings are very cheap indeed and, however attractive your stones, are liable to make the finished articles of jewelry look cheap and tatty too. Well made, handsome findings in base metals cost a little more but are worth paying for because they can transform the same tumbled stones into really elegant looking pieces of jewelry. Brass and steel can be strong, and usually have a gilt or silver coloured finish. Stainless steel is also available for some types of findings, and you can choose either a brushed or polished finish.

Sterling silver and 9ct. gold findings are considerably more expensive. It's no more difficult to set stones in these metals but it's obviously a good idea for the beginner to try her hand at jewelry making with the cheaper base metals first. Moreover, silver and gold findings are usually specifically designed to take the more expensive faceted stones and cabochons, and

it may be difficult to find one which provides a suitably comfortable fit for a baroque tumbled stone.

The three basic findings

Whatever article of jewelry you are making, whether it be a pair of ear-rings or a bracelet, your stone will be bonded to one of three basic types of finding—bell cap, pad mount, or claw setting. The most fundamental factor in selecting the right finding lies in deciding which of these basic types is most suited to your stone—a decision which should be determined by the shape of the stone itself.

Bell caps

The majority of bell caps (fig.1) are very like their name, being bell-shaped in appearance. They have either four or seven prongs and provide the means for suspending a stone. They are frequently used for pendants, drop ear-rings, key rings and for attaching hanging stones to bracelets. Pear shaped, oblong or 'drop' stones that taper to a point are most suitable for these bell caps. The narrowest end of the stone is fitted into the cap, and it is positioned so that the most attractive facet of the stone faces outwards.

Another type of bell cap has two prongs only. Sometimes referred to as a leaf bail this is the finding to use for suspending a flat stone (fig.2).



1. Bellcaps, plain or ornate come in many sizes. 2. Leaf bails and jump rings also come in various sizes.

Bonding a stone to a bell cap. Choose a bell cap which is of complementary style and in proportionate size to your stone—and into which a corner of the stone will fit snugly. Always test and shape the cap on to the stone before bonding into position.

To ensure that the most attractive facet of the stone is visible in the finished piece of jewelry, turn the bell cap so that the eyelet hole is facing you, and insert the stone with its 'best' face towards you (fig.3). Press the stone down well, making sure that it touches the metal base of the cap. If necessary, lift back the prongs a little with jewelry pliers or tweezers to seat them properly. Press the prongs firmly round the stone again to get the final effect.

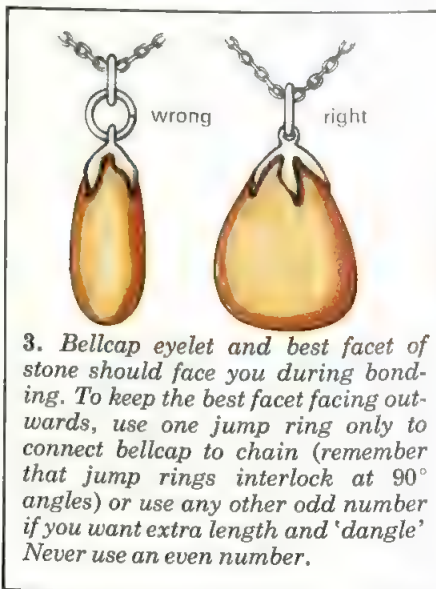
Remove the stone and, providing you are satisfied that stone and cap are well suited, proceed to clean and glue both as described in Lapidary chapter 2, page 279.

The procedure for attaching a flat stone to a leaf bail type of bell cap is very much the same. Again the question of proportionate size and complementary design should be taken into account. The finding is bent into a U shape the width of the stone. It is then bonded to the stone, leaving a deliberate gap between the top of the U and the stone itself in order to form an eyelet.

Jump rings

Having attached your stone to a bell cap, usually the next step is to pass a jump ring through the bell cap eyelet.

Jump rings (fig.2) are round or oval split rings of springy metal which act as connecting links to join one section of jewelry to another. They are used, for instance, for hanging a pendant on a neck chain, for drop ear-rings, and for suspending hanging stones from bracelets and key rings (fig.3).



3. Bellcap eyelet and best facet of stone should face you during bonding. To keep the best facet facing outwards, use one jump ring only to connect bellcap to chain (remember that jump rings interlock at 90° angles) or use any other odd number if you want extra length and 'dangle' Never use an even number.

Jump rings are not usually needed for putting a flat stone on to a chain necklet—providing the chain is slim, it can be threaded directly through the U-shaped space left between stone and leaf bail.

Key ring findings and most drop earring findings already incorporate a jump ring on to which the bell cap can be directly threaded—so you don't need to add one.

To fix a jump ring. When your stone is firmly secured to its bell cap and the glue has thoroughly dried, open wide a suitable jump ring by twisting both ends of the ring sideways with two pairs of jewelry pliers. Now hook one end of the ring through the eyelet of the bell cap and, if it is to be hung on a loop or link (for an ear-ring, chain bracelet or necklet), thread the other end over the loop or through the link. Then close the jump ring by pinching together firmly with the pliers.

Pad mounts

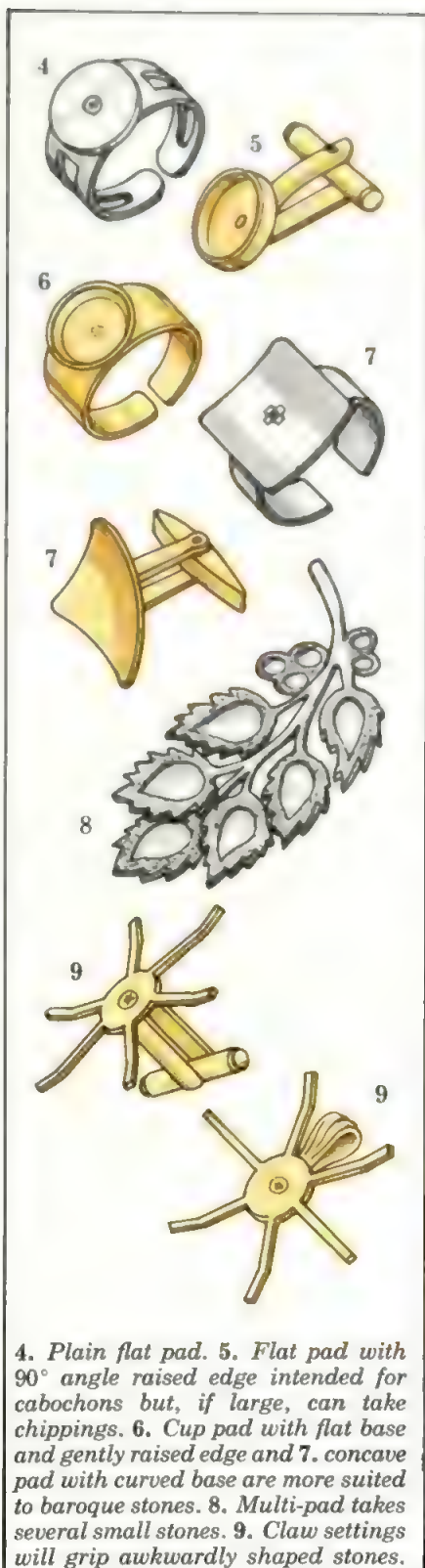
A large number of ring, brooch, pendant, cufflink, tie pin and ear-ring findings incorporate a pad or pads on to which a stone or stones are able to be bonded.

Flat plain pads (fig.4) are probably the easiest for the beginner to use. This is the finding to choose for a stone that has a flat base, and an upper surface (the only part that will show in the completed piece of jewelry) that is attractive and interestingly shaped. Flat pads can be round, oval, square, oblong or triangular; and are available in a good choice of sizes.

It is always best to choose a pad that is as big as possible as this will give your stone maximum support, but remember that the pad must be just small enough to be completely concealed by the stone—or the results will be unsightly.

Large flat pads can be used for mounting a single stone or several smaller ones. Using several smaller stones is more tricky because it involves finding stones that harmonize in colour and shape. It also requires considerable care to ensure that the entire area of the pad will be covered. Moreover, because of their size, very small stones or chippings are difficult to handle—but this problem can be minimized by using tweezers or jewelry pliers when applying adhesive and seating the stones into their correct positions.

Flat pads with raised edges (fig.5). Some flat pads—usually round or oval in shape—have raised edges or rims. This edge, which can be plain or decorated, rises at a 90° angle from the pads. These pads are ideal for use with cabochons and preformed stones (which are discussed in detail in a later chapter) and it is really preferable to reserve their use for these stones. Like



4. Plain flat pad. 5. Flat pad with 90° angle raised edge intended for cabochons but, if large, can take chippings. 6. Cup pad with flat base and gently raised edge and 7. concave pad with curved base are more suited to baroque stones. 8. Multi-pad takes several small stones. 9. Claw settings will grip awkwardly shaped stones.

all pad mounts they can be used for the more irregular shapes of tumbled and polished stones—but be warned that considerable perseverance and luck are needed to search out a suitable candidate stone from your own collection: it must be flat based and fit precisely into the area. They can also be used for chippings.

Cup pads (fig.6) are a variation. Again you will have to take care to find a suitable stone but, because the edge rises gently at approximately 135° from the pad, the chances of finding a baroque or tumbled stone that fits well are considerably higher.

Concave pads are dished in varying depths, shapes and sizes to accommodate stones with gently rounded bases (fig.7). Again, it is best to choose a pad which is hidden by your stone but gives it maximum support. Small round filigree concave pads are sometimes called flower pads. They are so decorative that it doesn't matter if the stones fail to completely conceal the pads.

Multi-pads. Some findings, notably brooches and rings, incorporate several pads (fig.8). Often these consist of one large pad surrounded by several smaller pads. Or, sometimes, there are several pads of the same size. These are challenging for the jewelry maker intent on using his own tumbled stones because it takes time and patience to assemble stones that make a really attractive set—matching in size and colour and pattern. Moreover, many multi-pads are round or oval in shape and have raised edges—and these should definitely be reserved for use with cabochons and preformed stones only.

Claw settings

A claw setting is really a cross between a pad mount and a bell cap. It has a central pad on to which part of the stone is bonded, and claws or prongs which can be adjusted to close around the stone and hold it in position (fig.9). A claw setting is the most versatile of the three basic findings, and it can be used for a stone of almost any shape providing the stone has a small flattish area which can be bonded on to the pad. It is a very popular setting for rings, brooches and pendants, and increasingly used for cufflink findings and other articles of jewelry too.

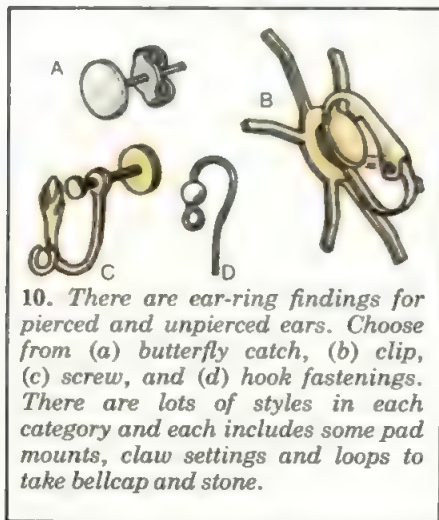
How to fit a claw mount. Choose a mount of size and style compatible with your stone. Place the stone on it, moving it around until you find the best position. If the stone has any definite bumps, it may be necessary to place each of the bumps between two claws to give a firm grip. Bend the claws gently round the stone with your fingers. Remove the stone and shape each claw with jewelry pliers, then replace the stone and complete the placement of the claws so that the stone is held in a fairly firm grip.

The stone can now be removed again, and the job of cleaning and bonding can begin. Remember that claws must be closely pressed against the stone or they will tend to catch in clothing.

Other jewelry findings

Ear-ring findings (fig.10) are made for pierced and unpierced ears. Check that ear wires are made of sterling silver or gold to avoid inflammation of delicate ear lobes. Drop ear-ring findings usually incorporate a loop on to which bell cap and stone can be threaded direct, but you can add jump rings if you wish to give extra 'dangle' and length.

Obviously, you will wish to spend time and care on selecting stones that look as though they belong together as a pair, but remember that no two stones are ever identical: compatibility of size, shape and colour should be your aim.



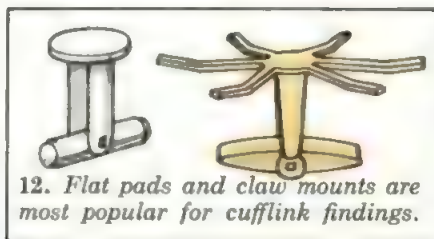
10. There are ear-ring findings for pierced and unpierced ears. Choose from (a) butterfly catch, (b) clip, (c) screw, and (d) hook fastenings. There are lots of styles in each category and each includes some pad mounts, claw settings and loops to take bellcap and stone.

Ring mounts (fig.11). The majority of ring mounts have adjustable shanks which can simply be squeezed together to fit any finger. But sterling silver and 9ct. gold ring mounts are available in specific finger sizes. They need not be very costly and a silver ring with a flat pad can make an extremely handsome and durable mount for displaying a tumbled stone.



11. Base metal ring mounts fit any finger size. Different types of adjustable shanks as shown in these claw mounts, flat pad and concave flower pad rings.

Cufflinks (fig.12), like ear-rings, require compatible stones. Because cufflinks take a lot of wear, it is particularly important to bond the stones very firmly. Scratching the surface of both stone and pad with a carborundum stone before cleaning and bonding ensures that the adhesive has a good surface to grip on (modern knife sharpeners are usually made of steel but if you have an old-fashioned one it is undoubtedly made of carborundum). Some decorative mounts have lacy filigree edges which can be bent over the stone with jewelry pliers for extra security.



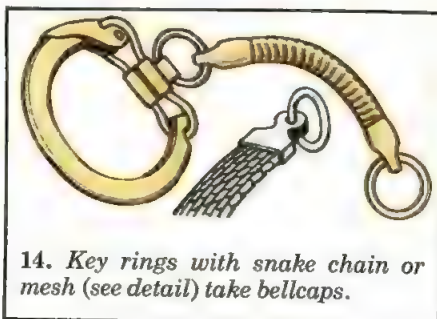
12. Flat pads and claw mounts are most popular for cufflink findings.

Tie pins, tacks and clips (fig.13). Tie pins and tacks nearly always have a small round flat pad; and tie clips have a long narrow flat pad on to which a stone or row of stones can be mounted.



13. Tie pins, tie tacks and tie clips usually have flat pads.

Key rings (fig.14) invariably incorporate a jump ring through which a bell cap and stone can be hung. Key rings are inclined to get a lot of wear, so it is advisable to use your carborundum stone on both stone and bell cap before bonding.

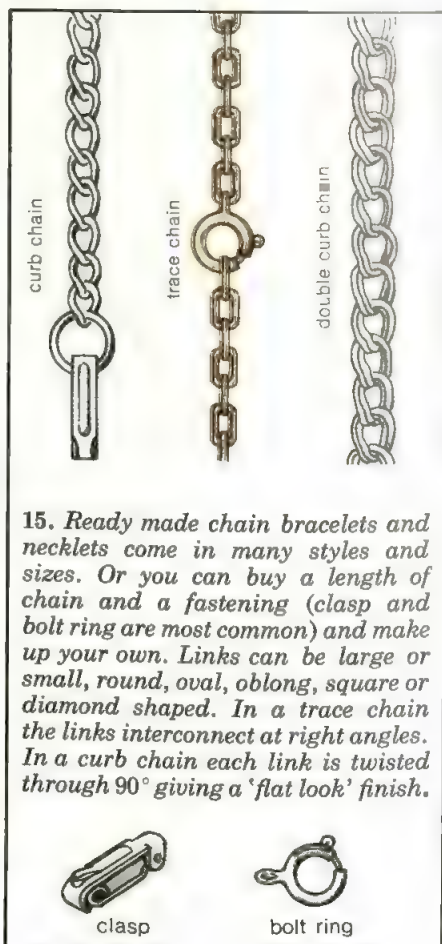


14. Key rings with snake chain or mesh (see detail) take bellcaps.

Chain bracelets and necklets (fig. 15) can be bought ready made or can be made up by yourself. Trace chains consist of links joined at right angles to each other. In a curb chain each link is twisted through 90° so that the resulting chain has a 'flat look' finish. Chains can be bought purpose made for attaching pendants or hanging stones with bell caps and jump rings, or for threading directly through the gap between a flat stone and a leaf bail. A 68.5cm (27") chain will slip over the head easily and is therefore a closed chain of links. Anything smaller than a 61cm (24") chain will include a fastening.

Alternatively, buy a length of chain and a fastening, and make the necklet or bracelet yourself. Try to purchase the exact length required. If you have to shorten a chain either open a link (as described for jump rings) and detach the unwanted extra length, or cut through closed metal links with silver shears. Never attempt to do the job with scissors as this will mangle both chain and scissors.

The most commonly available and simplest type of clasp is a bolt ring. Fit this spring loaded catch to one end of your chain, and a jump ring—on to which the bolt ring can engage—to the other end.



15. Ready made chain bracelets and necklets come in many styles and sizes. Or you can buy a length of chain and a fastening (clasp and bolt ring are most common) and make up your own. Links can be large or small, round, oval, oblong, square or diamond shaped. In a trace chain the links interconnect at right angles. In a curb chain each link is twisted through 90° giving a 'flat look' finish.

Bracelets and bangles (fig.16), like cufflinks, are subject to a lot of wear, so it's advisable to use a carborundum stone before applying adhesives.

The most usual kind of bracelet mount consists of flat pads joined by links. The pad can be of various shapes and there are usually six to eleven of them. Obviously the greater the number of pads, the more trouble it will take to assemble a set of stones of similar shape and size in harmonizing colours. Occasionally you will find a bracelet mount with several chain links between each pad so that dangling stones can be interspersed with pad bonded stones.

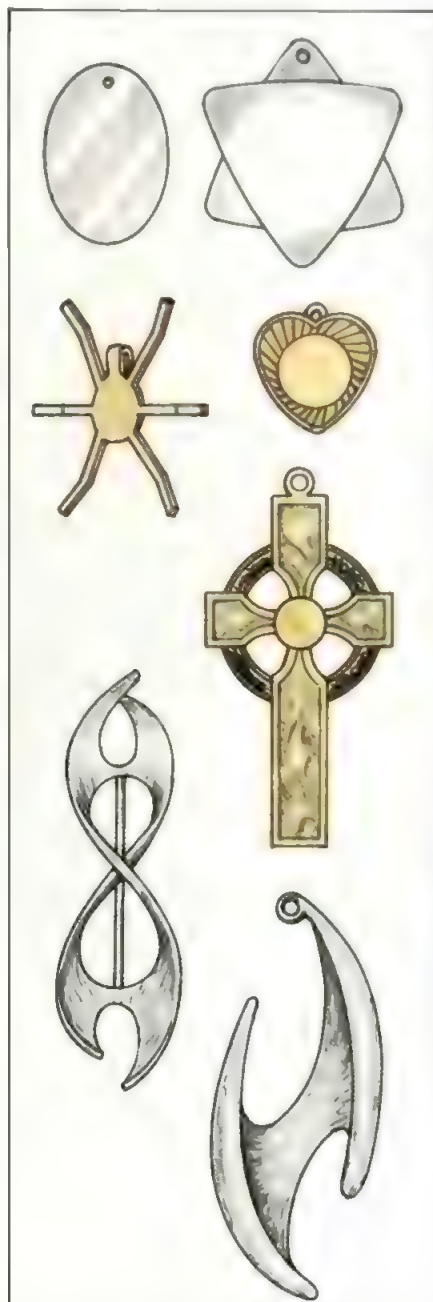
Bangles are usually adjustable wide metal bands with a single large pad. Avoid pads with raised edges unless using chippings or a cabochon.



16. Bracelet and bangle findings usually have pad mounts. Some findings, such as the popular oval flat pad bracelet and the concave flower pad bracelet shown here, are very decorative in their own right so it does not matter if your stones fail to completely cover the pads.

Pendants (fig.17). Basically there are two types of pendant findings, the simple and the ornate. The purpose of a simple pendant is purely to show off a stone. A claw setting falls into this category. So does a small pad which will be completely concealed by the stone.

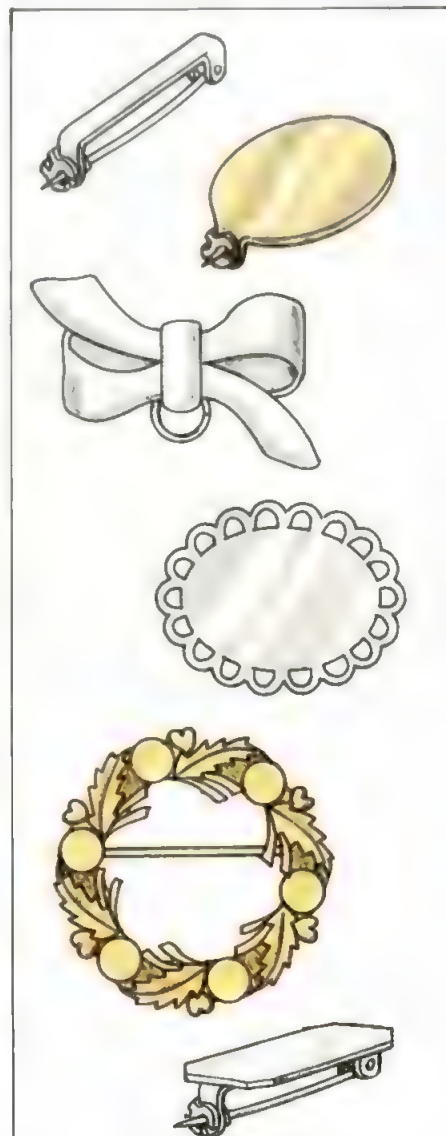
But the majority of pendant findings are cast mountings and highly decorative in their own right. Available in every imaginable shape and design they incorporate a pad or pads on which a stone or stones can be mounted to complete the ornamentation.



17. A plain pendant is intended only to mount and show off a stone. Cast pendants are sometimes ornate enough to wear without a stone.

Brooch mounts (fig.18) can be simple pin-backed pads on which a stone or stones can be mounted; or fob brooches (usually in a bow shape) with a loop from which a bell cap and stone can be hung; or decorative cast mounts which incorporate a pad or pads for bonding stones.

Always ensure that a brooch pin is positioned to be above the centre point of your stone—this will avoid the stone tilting forward in an unattractive way. Remember too that looking at the back of the brooch, the pin should always point to the left. Most types are available with a safety catch.



18. Common types of brooch mounts: narrow bar for a row of stones, oval flat pad for a large stone, bow-shaped fob brooch for bellcap and stone, brooch with decorative outer border and slightly recessed flat pad is suitable for chippings, wreath-shaped brooch with six flat pads for small tumbled stones or preformed stones.

Techniques for hand stitching



The traditional method of quilting a design is by hand stitching and although this method is not as speedy as working by machine, it is well worth mastering and gives great satisfaction to the worker.

At the end of this chapter there are a pattern and instructions for working a bird motif which could be used on a bag or be repeated to cover a larger item. There are also instructions and a pattern for making a luxurious quilted cushion.

Quilting was probably introduced to Europe by the crusaders returning from the Middle East. It spread to America with the settlers who needed warm bed covers and clothes to protect them from the cold. They turned quilting into a social occasion by arranging quilting bees where women would gather in a neighbour's house to quilt and chat. Their colourful appliqué and patchwork quilts were quilted with white thread to make the patterns more distinctive.

In the North of England and in Wales quilting flourished in the coal mining areas as a cottage industry and it quickly spread to other parts of the country.

Patterns were handed down from generation to generation and the character of the designs varied from one district to another. Skilled workers working in groups could simply divide the area to be quilted into quarters and using templates they built up the design directly on to the fabric.

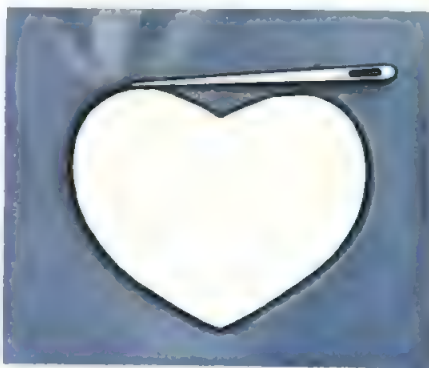
Many patterns were inspired by natural objects such as birds, feathers and flowers. The Scale, Cable and Wine-glass patterns were very popular as were geometric and basket weave patterns which were often used for filling in the background of a quilt, to throw the central and border motifs into relief. Hearts, flowers and other symbolic motifs were used for wedding quilts and the cot quilts made when a child was born. It became a tradition for a girl to make thirteen quilts before she married; the first was simple and each quilt became more complex until the final Bride's Quilt, the most elaborate, was finished.

In America white quilts, made on

white fabric and stitched entirely in white thread, were a fashion between the 18th and mid 19th century. They were made principally by the women of Virginia, the Carolinas and New England. As there were no colours on these quilts, they relied entirely upon the interesting surface texture of the quilting for their effect.

Marking the design

The traditional way of marking the design on the fabric is to draw round wooden, metal or card templates with a blunt needle, such as a rug or tapestry needle, held almost flat against the right side of the top fabric (a sharp needle might damage the surface of the fabric). The slight pressure exerted leaves a thin line in the cloth (fig.1) which is invisible when the quilting is finished. This method is worked when the three layers of fabric have been tacked together and are ready to quilt.



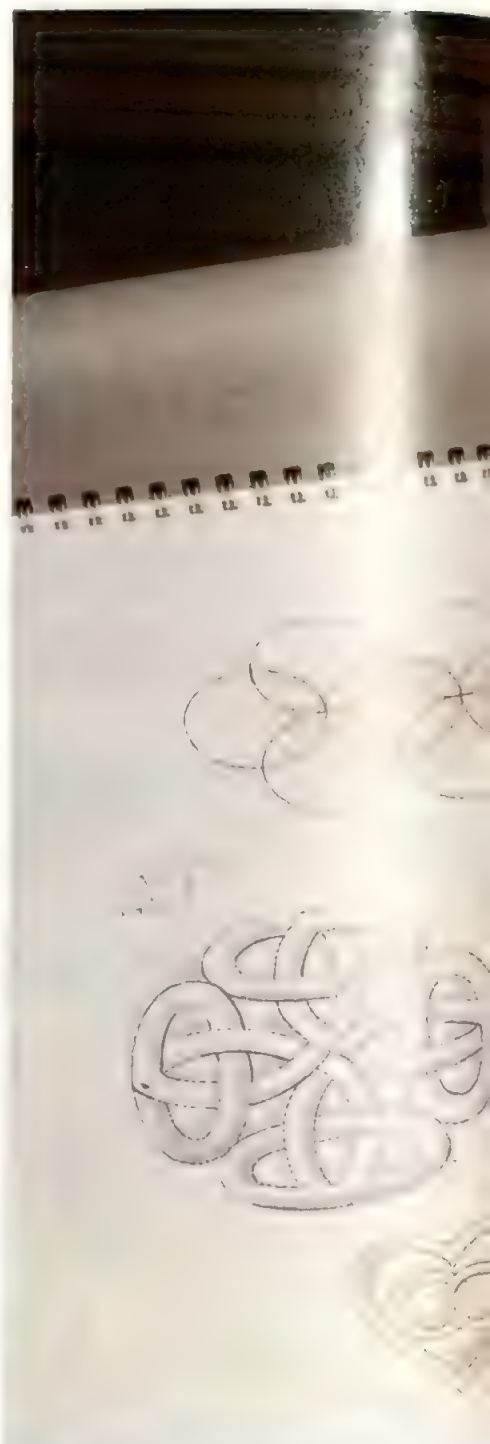
1. Marking a design with a needle.

On a large piece of work mark out only as much of the design as can be worked in one sitting, as the marks wear off with handling.

Another way of transferring the design to the fabric is to use dressmaker's carbon paper in a colour almost matching that of the fabric.

Draw the chosen design on tracing paper. Lay the top fabric right side up on a flat surface and place the carbon paper over it and the tracing paper on top. Work round the design with a pencil or tracing wheel.

Note: this second method could be used with a template instead of a drawing of the design.



Lining

In the case of articles such as quilts the backing is usually of a similar fabric to the top, making the quilt reversible.

If you wish to bind the edges of a quilt with the lining (see Finishing overleaf) cut this about 5cm (2") larger all round than the top fabric.

Tacking

Lay the backing and top fabrics with the wadding between, on a flat surface and tack through the three thicknesses as described in Quilting, chap-



Dick Miller Illustrations Barbara Firth

ter 1, page 882. The lines of tacking should be about 4cm (1½") apart. Finally tack around the outer edge.

Frames and alternatives

Large items

Traditionally, large articles such as bed covers were worked on a quilting frame, a rectangular frame the width of the quilt, which rested on chairs or on trestles. It is impractical to use such a frame in a small modern house or flat, and even if space permitted this type of frame is not on the market and would have to be specially made. Con-

sequently alternative methods of working must be found.

Method 1. It is possible to quilt the bed cover entirely in the hand. In this case it is more important than ever to tack the layers together really thoroughly before beginning the quilting.

Method 2. Use an embroidery hoop, and move it along as the work progresses. There is a strong 2.5cm (1") deep frame on the market which clamps to a table, leaving both hands free to handle the work.

Method 3. Quilt the article in sections (known as 'blocks') and join them

Top row: the wineglass—an upturned glass was used to mark this pattern; the scales (or shell) was a favourite filling, either plain or with embellishments; a plaited border.

Middle row: true lover's knot and two of the many feather patterns.

Bottom row: variations on the heart theme and a cable (twist) border.

together when the quilting is completed. This is known in America as 'lap quilting' or 'apartment quilting' as it can be worked in a small space.

☐ Choose a design which falls natural-

ly into sections, say $\frac{1}{4}$ th or $\frac{1}{8}$ th of the entire bed cover.

The backing should be of the same fabric as the top, or a cheaper version of it (not muslin). Allow an extra 2cm ($\frac{1}{2}$ ") round the top and backing fabrics for seaming. Tack and then work each block (fig.2).

□ Join the quilted blocks together, by laying two right sides facing, and seaming the top fabric, close to the wadding (figs.3 and 4). Proceed in this way until all the blocks are joined. Turn over and slip stitch the backing fabrics together.

□ If desired the seams may be concealed on the right side of the quilt by working one or two rows of quilting on, and running parallel to, the seam, and on the back by neatening with tape or ribbon (fig.5).

Quilting in blocks is also very suitable for machine quilting large articles which would be cumbersome to manipulate on the machine.

Smaller quilted articles

These can be set up in a rectangular embroidery frame (slate frame) or an improvised frame. The latter could be the back of an old picture frame of the right size, or a simple home made stretcher. With the improvised frame the work could be pinned into place with drawing pins.

To make a simple stretcher cut four pieces of 35mm x 15mm ($1\frac{1}{4}$ " x $\frac{1}{2}$ ") wooden battening or softwood to form a rectangle of the required size. Join

the battens with either long nails or strong screws (fig.6), or glue and strengthen with an L-shaped metal plate at each corner (fig.7).

When setting up work in a slate frame or on an improvised stretcher it is advisable to fix the backing on first, stretching it tightly, then put on the wadding and top fabric and tack through all three layers.

Stitches

Running stitch is the easiest stitch to work but back stitch and chain stitch are also used. Whichever stitch is chosen it should be used throughout the work.

Stitching through three layers of material is not easy and working stitches quickly only comes with practice. Use a No.50 sewing cotton or a pure silk thread, knot the end and pull it through the backing fabric to lie in the wadding. Each stitch is worked in two movements: one to take the thread from the top fabric through to the backing and the other to return it to the top (fig.8).

All stitches should be as neat as possible, and when running stitch is used the stitches and the spaces between them should look the same on both sides of the work.

When a pattern is an intricate one, it is best to use several needles, working a short distance along each line in the design to ensure the work is completely smooth.

To finish, take the thread through to the backing and work a stitch over one thread in the fabric. Take the thread further along the design, through the wadding, and repeat. Do this until the excess thread is used up. These minute stitches will be completely covered as the quilting proceeds.

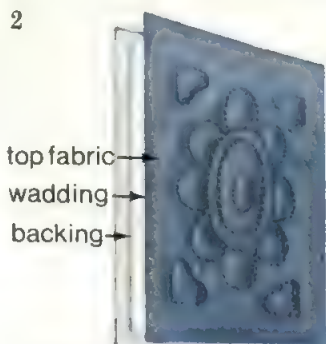
Finishing

The edges of a quilt can be bound with a matching bias strip.

Alternatively, the wadding can be trimmed level with the top fabric and the 'border' of backing fabric trimmed to 2.5cm (1") larger all round than top fabric and used to bind the edges. This is only feasible when the backing is of a substantial fabric.

To do this turn in 6mm ($\frac{1}{4}$ ") on each edge of backing, tack and press. Then turn down each corner diagonally over the top fabric and trim off about 9mm ($\frac{3}{8}$ ") across the corner (fig.9). Turn the folded edges of the backing down on to the top fabric, making a neat mitre at each corner. Tack edges down and then slip stitch mitred corner and edges neatly in place (fig.10).

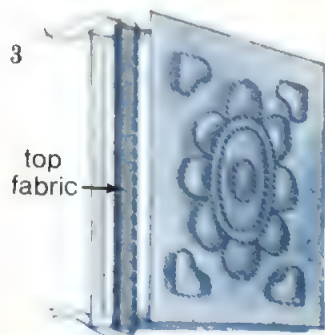
Another very easy way of neatening the edges is to trim the backing level with the top fabric and trim the wadding 2cm ($\frac{1}{2}$ ") smaller all round. Then turn in and press 1.5cm ($\frac{5}{8}$ ") to the wrong side on all edges of the top and backing fabrics and sew the two folds together with running stitch worked very close to the edge.



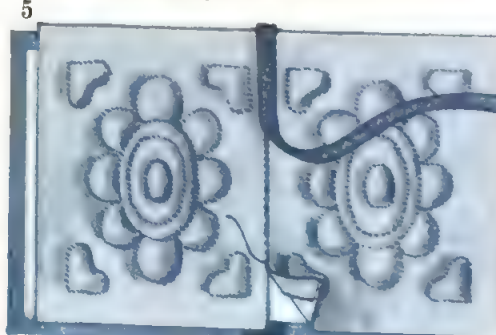
2. Quilted block with top and backing fabric cut larger than wadding.



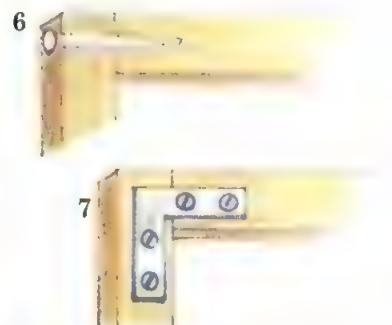
4. The top side of two blocks which have been seamed together.



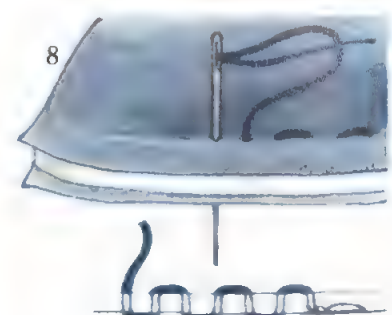
3. Seaming top fabric on two blocks.



5. Backing slip stitched and neatened.



6, 7. Join battens with screws or with glue and metal plates.



8. Quilting with running stitch.

Bird motif

You will need

35cm (14") square of pale pink cotton lawn, backing fabric, and 110gm (4oz) synthetic wadding.

Dressmaker's carbon paper in white.

Tracing paper.

Matching thread.

2.5cm (1") deep, round, 20cm (8") diameter embroidery frame.

□ Enlarge pattern so bird is 15.5cm (6") high (Design know-how 4, page 112).

□ Press both pieces of fabric and lay the top fabric on a flat surface, right side up. Place carbon paper over it.

□ Centre the tracing of the bird on the fabric and carbon paper and, using a pencil, draw round the design.

□ Place the wadding over the backing fabric and the marked fabric on top.

□ Tack the layers together. Thread the needle with matching thread, knot it and pull knot through backing fabric to lie in the wadding.

□ Start by quilting the body of the bird, working round the outline with running stitches.

Work the tail, then the feet and finally the eye, wing and line of breast feathers.

□ Using the frame as a template, draw round the inner edge with a needle held flat against the fabric to leave a thin crease.

□ Work round the circle with even running stitches (fig.11), moving the frame round to work each section. Finish off end of thread.



Above: the bird motif quilted with neat running stitches.

Below: the pattern for the bird motif. Enlarge the pattern so that it measures 15.5cm (6") in height.

9

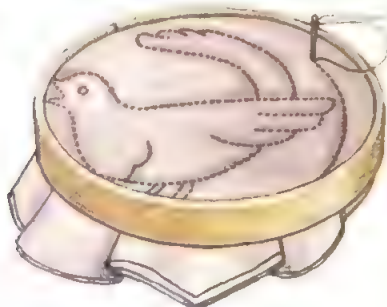


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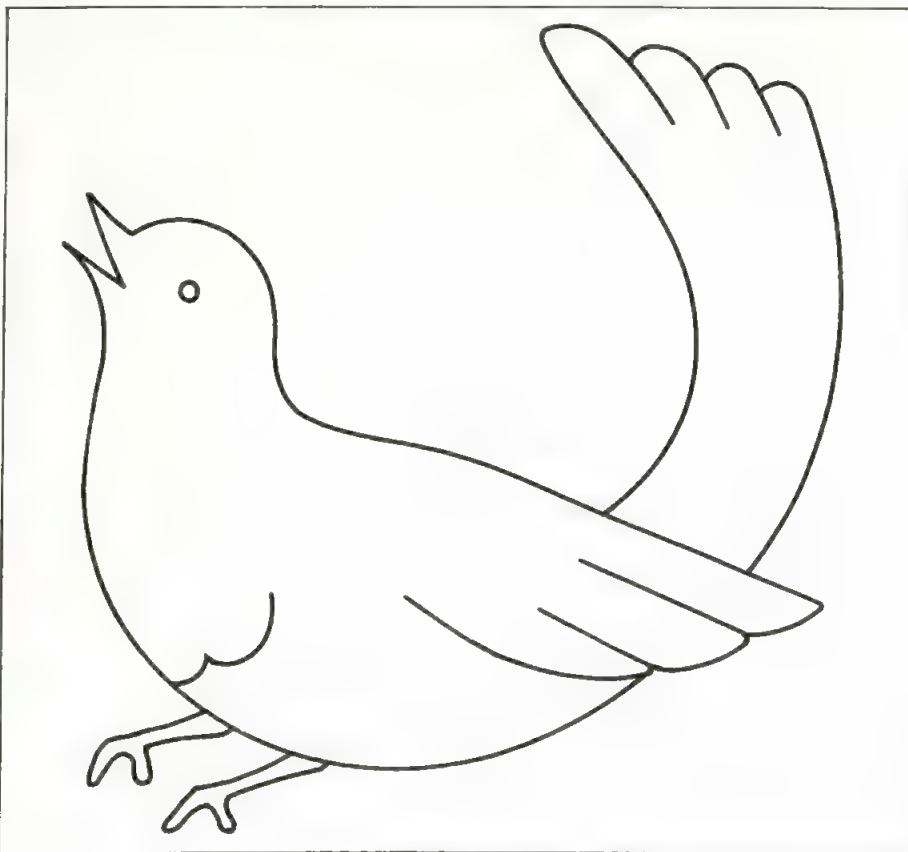


9, 10. Edges of a quilt finished with its backing fabric.

11



11. Working running stitch around circle.



Painting on wooden chests

Colour —
paint 7



Painted whitewood furniture is both inexpensive and useful. With a little paint and patience you can make it decorative too. The ideas for chests shown here are full of imagination yet they are easy to do. They also give some indication of the range of possibilities — from bright easy-to-draw motifs like the tree design to the more complex jungle pattern overlaid.

All the designs shown can be adapted to chests of different dimensions. They were created with unpainted or whitewood chests in mind, since these can be bought in most department stores, but they are equally suitable for reviving old furniture. Chests without knobs, on the whole, tend to be best suited but chests with knobs can also be used, and the knobs incorporated in the design.

Preparing the surface

Whether you are decorating an unpainted chest or an old one with several coats of paint already on it, you must sand the surface with fine glasspaper and wipe it down with white spirit. Unpainted furniture should be given a coat of leadless white primer. If you are re-painting a chest make sure that the surface is smooth and in condition to receive the paint. Some old chests require considerable attention before they are ready for re-decoration.

Paint

All the designs shown are painted with oil-based enamel paints available from hardware shops. At least two and sometimes three coats of each colour are normally required and when there is a background colour, as in the jungle chest, then the entire surface must be given two coats of enamel before the design is applied.

Since enamel paint tends to run and form drips when applied vertically, you should paint each side in a horizontal position. This is time-consuming because enamel paints take several hours to dry properly and the chest must be rotated on to the dry areas in order to paint and re-paint each side. You must therefore expect the entire process to take a few days. The effort is worth it, however. Your finished surface will be smooth and hard wearing.

You may, in some cases, want to sand lightly with fine glasspaper between coats if dust has accumulated while the paint was drying, for example.

Tree pattern

This charming design has a naive, spontaneous quality and can be drawn freehand. Observe that the tree is the same on the front and sides of the chest. The ingenuity of the design is that each view represents the tree at a different time of day. The top is a bird's eye view (complete with bird) of the tree from above.

You will need:

Soft lead pencil.

Masking tape.

Plates or washing-up bowl for guide lines.

Sheets of tracing paper sufficient to cover front of chest if making a pattern. Stiff paper for star pattern (optional). Enamel paint in 8 colours: yellow, orange, lime, a bright green, sky blue, white, tan, dark blue, black.

Selection of natural bristle paint brushes.

White spirit for cleaning up.

Leadless white primer.

Long ruler.

Protractor (optional).

Before you begin, sand and prime the chest as described above.

To make the outline: first mark the ground line all round the front and sides of the chest by drawing a line 10cm (4") from the bottom.

□ Next, make a pattern for the green tree shape by drawing a rounded design using plates and saucers for guidelines. Cut out the pattern so it can be traced round and transferred on to the chest. When tracing, take care to centre the free shape and when copying the pattern on the front of the chest let it hang straight and then connect the gaps between the edge of the drawers and the recessed frame.

□ The tree trunk is made by drawing two straight lines perpendicular to the base or ground line and 7cm (2½") apart. Make these in the centre of each side.

□ The sunrise background can be made by tracing the outline of a large plate or a washing-up bowl just above the ground line while the sun rays

must be measured using a long ruler (or other guide). A protractor will help to get the rays at the best angle.

In the midday sky on the front of the chest the clouds are drawn freehand using plates to make the contours. Take care to match up the drawers with the support frames between them.

□ The stars in the evening sky are drawn freehand on the chest shown but if you prefer to have them uniform then draw a star on stiff paper using a ruler, cut it out and trace round its outline at the places on the chest.

□ Use plates to make the tree top shape on the top of the chest and transfer the bird design from pattern given (fig.1).

To paint. Before you begin spread a thick layer of newspapers on the floor around the chest, remove the drawers and place them, face side up, on the paper in the same relative positions they occupy in the chest.

Begin with the background and paint the sky on the top of the chest first. Then lay the chest on its back on newspapers and paint the sky on the front, avoiding the white cloud areas. Paint the sky areas on the drawers at this stage too.

□ Roll the chest carefully on to its left side so that the sunrise background is exposed. Paint the yellow disc and rays next, using masking tape on the outside of the rays to get a good straight line.

□ Allow the paint to dry.

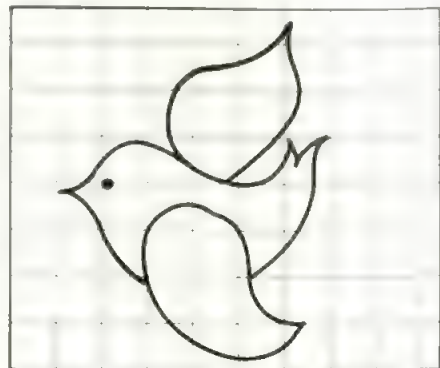
□ Roll the chest on to the sunburst side and expose the evening sky. Paint the dark blue areas, taking care to avoid the stars.

□ Gently turn the chest on its back and apply a second coat of sky blue to the front and to the drawers.

□ Then turn the chest back on its side and apply a second coat to the evening sky. Allow to dry.

□ Paint the second yellow coat of sun rays and allow this to dry.

□ You are now ready to paint the orange rays but you must first remove the masking tape from the sun ray areas you have already painted and



1. Graph pattern of bird motif.



The progress of a day is delightfully recorded in this simple design showing a tree at different times—first at sunrise, at midday and finally by starlight. The top is quite literally a bird's eye view. Designed by Lorraine Johnson.





2. The jungle motif above is painted over an enamelled background. 4. The pattern on the right is by Lorraine Johnson.

apply new masking tape along the outline of orange rays.

□ Continue rotating the chest, painting the clouds next and, when the sunburst is dry, the stars. For a crisp delineation you can mask the star outlines.

□ When all this is dry it is a good time to check your drawers to make sure the design is properly aligned. Replace the drawers temporarily and correct any discrepancy by marking it with chalk and re-painting where necessary.

□ Apply a second coat to the clouds and stars. The ground colour and the tree leaves can be painted at the same time. Mask the ground line first and paint the front and one side. Allow to dry and paint the other side.

□ When the green areas are completely dry and have received two coats of paint you are ready to paint the trunk. Make sure, however, that the surface is absolutely dry. You must mask the outside lines of the trunk to be assured of a straight line and the tape may pull up some of the green paint if it is not completely dry.

□ When the trunk has been painted by the rotation method already described return the chest to its original vertical position and complete the top.



3. Jungle motif incorporating both a chest and the surrounding wall.

Jungle chest

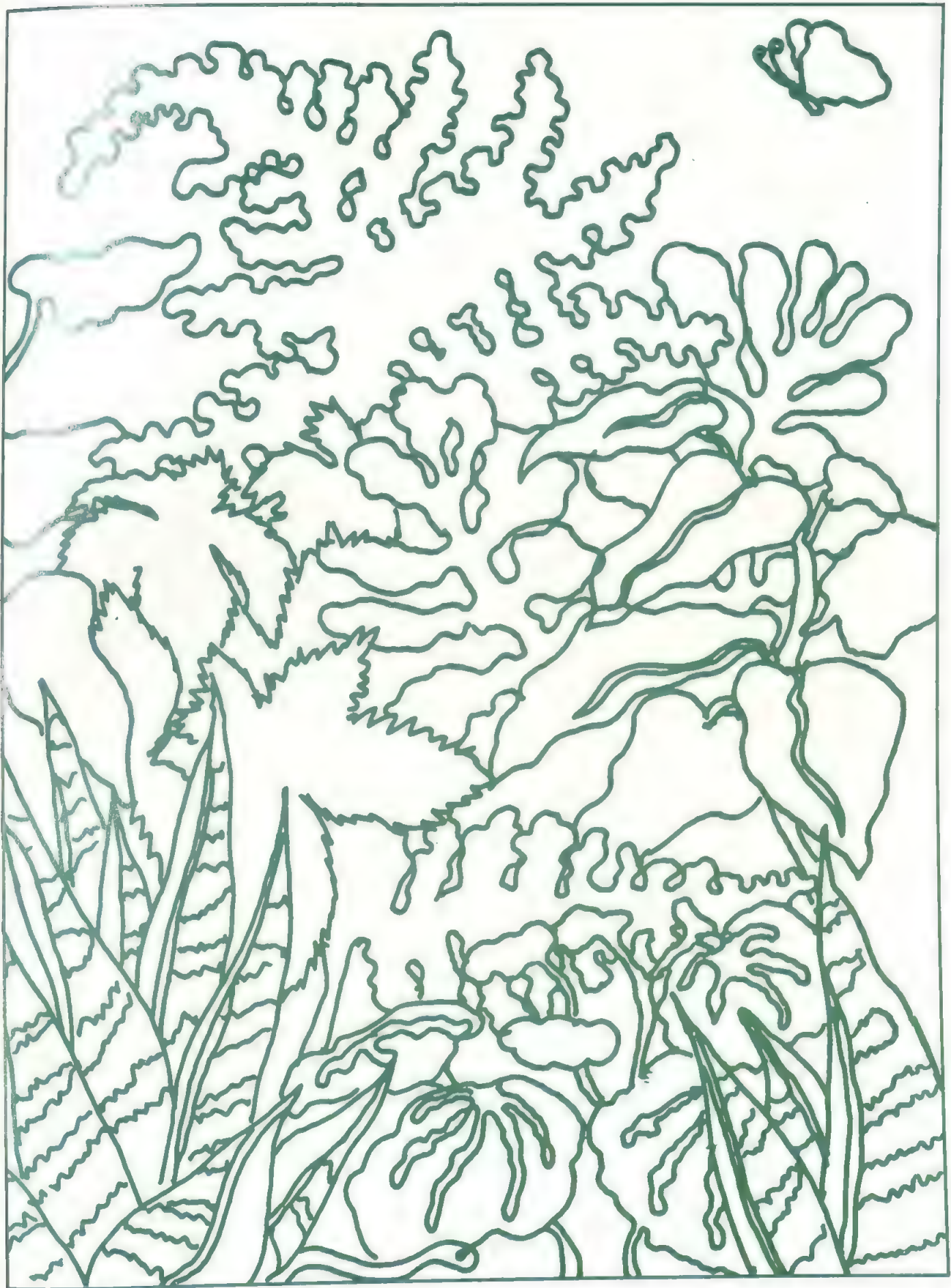
This pattern (fig.2) is a more complex design which requires careful tracing and more delicate painting. The result is a more sophisticated decoration that could also be continued on to the surrounding wall (fig.3).

The design shown here has a white enamel background but the pattern might look even more dramatic on a dark background, navy blue for instance. Bear in mind however, that if you choose a dark background it will mean more coats of paint since the design must completely cover the en-

amelled background.

To paint the design, first enlarge the design from the pattern (fig.4) and trace the pattern carefully on to the enamelled surface making sure to link up the spaces between the drawers with those in between. On a dark background use dressmakers' carbon paper in a pale shade for tracing the design. Choose three or four basic colours such as lime, emerald green, tan and bright yellow and mix the co-ordinating hues yourself.

Paint by rotation as described in the tree motif chest above.



Knitting in rounds

Yarn — knitting 4



Knitting in rounds, or circular knitting as it may be called, is simpler than it sounds. It also gets rid of a lot of the tedious seaming involved in the making up of garments and overcomes many of the problems which may arise when you are working with two or more colours.

If you are making a patterned garment like the ganseys (fisherman's jerseys)

seen later on in this chapter, there is no need to work backwards and forwards in rows so that on every second row the wrong side of the work is facing you, with the yarn carried across the front. Instead you can knit in rounds and it is easy and exciting to watch the colour patterns develop.

You can knit almost any patterned stitch in rounds, but as the right side

of the knitting is always facing you there are several interesting differences in stitch patterns that you have already learnt.

Stitch patterns

Stocking stitch is the easiest to work as every round is knitted. It does not look like garter stitch, but perhaps you will have to try a sample to convince yourself.

Garter stitch is formed by alternately knitting and purling the rounds. The purl rounds are necessary to make the ridges which are characteristic of garter stitch.

For single ribbing the same principle must be observed. Instead of purling each knitted stitch and knitting each purlled stitch on alternate rows, you just carry on knitting the knitted stitches and purling the purlled stitches on every round.



Tools and know-how

Circular knitting must be worked either on a set of four needles (fig.1a) which have points at both ends or on a circular needle which has two small needles joined together by a length of flexible nylon (fig.1b).

Circular needles are not practical when only a few stitches are required. The table (fig.2) shows that the number of stitches must be sufficient to space out right round the nylon strip, ready to join up to knit the next round.

Casting on with four needles

When using a set of four needles, the stitches must be cast on and divided evenly on to three of these needles, leaving the fourth free to work with (fig.3).

Make sure that the stitches do not become twisted, then pull the yarn tightly across to the first needle again, ready to knit the first round with the fourth needle (fig.4).

Always mark the beginning of the first round with a loop of coloured thread tied round the needle. You can slip this loop from one needle to the next on subsequent rounds and it will ensure that you do not lose your place.

Casting on with a circular needle

Cast on the required number of stitches in the usual way, taking care that they do not become twisted.

Pull the yarn tightly across to the first cast on stitch, then continue knitting right round to the end of the cast on stitches.

Again you should mark the beginning of the first round with a coloured thread to show the first stitch of the round.

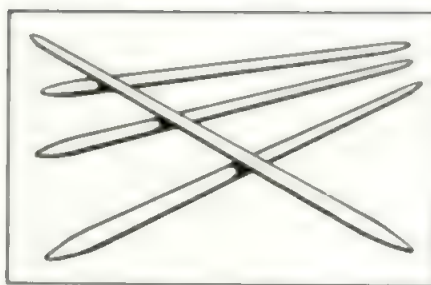
Dividing circular knitting

Say you are working in rounds to make a garment, then there are certain points on a pattern where the work must be divided and continued in rows, such as the armhole shaping on a jersey.

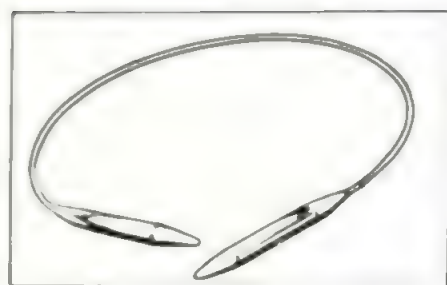
Traditional gansey pattern

One of the best and most inspiring ways of practising knitting in rounds is by making yourself a fisherman's jersey or gansey. Not only is the shape so simple and functional, but it acts as a perfect background for any design which you would like to incorporate. In the past, intricate stitches and symbols were worked into each design, but never in a haphazard fashion. Each symbol used tells a story, reflecting the fisherman's working and family life and, apart from recognizable regional styles, each village and many individual families have their own designs.

Left: bright and bold—this tassel trimmed, garter stitch cushion is quickly made in strips of Pingouin Tapis yarn using a large circular needle.



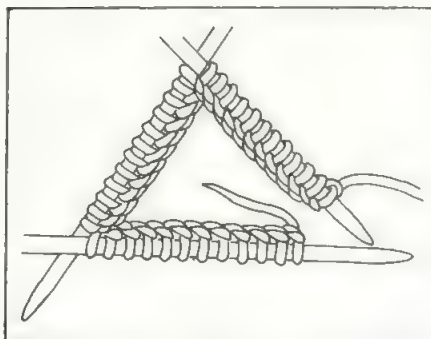
1a Set of needles pointed at both ends.



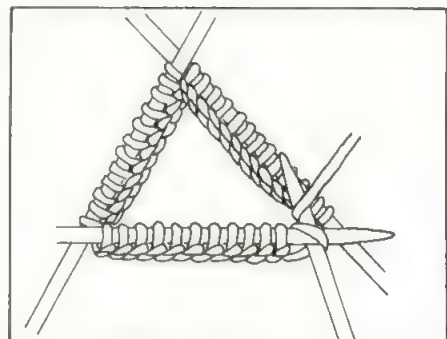
1b. Circular knitting needle.

Tension Stitches to 2.5cm (1")	Lengths of circular needles available						
	40.5cm (16")	50.5cm (20")	55.5cm (24")	68.5cm (27")	76cm (30")	91.5cm (36")	107cm (42")
5	80	100	120	135	150	180	210
5½	88	110	132	148	165	198	230
6	96	120	144	162	180	216	250
6½	104	130	156	175	195	234	270
7	112	140	168	189	210	252	294
7½	120	150	180*	202	225	270	315
8	128	160	192	216	240	288	336
8½	136	170	204	220	255	306	357
9	144	180	216	243	270	324	378
Minimum number of stitches required							
Example*	A pattern calling for a minimum number of 180 stitches to be knitted with a tension of 7½ stitches to 2.5cm (1") would require for convenient use a needle not exceeding 55.5cm (24") in length.						
N.B.	The length of needle given for a minimum number of stitches will accommodate at least four times as many additional stitches.						

2. Length of circular needle required depends on tension and number of stitches.



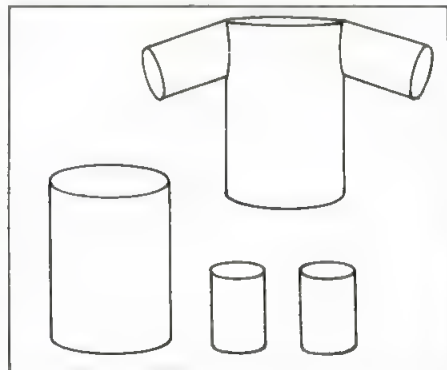
3. Cast on stitches divided evenly on to three of the four needles.



4. Pull yarn tightly across and use fourth needle to begin the first round.

Traditionally the work is not divided at the underarm, but the armhole is separated from the main body of the jersey by a series of loops wound round the needle on every round. These loops are dropped from the needle on the following round and the process repeated, leaving a series of what look like rungs of a ladder between the main sections.

The strands or rungs are then cut down the middle and each is carefully darned in. Then stitches are picked up all round the armhole and the sleeve is knitted down to the cuff.



Three tubular forms make basic gansey.



Ganseys made in Madame Pingouin—woman's is decorated with zigzag border and man's has stitch detail on sleeves.

Modified gansey pattern

Today ganseys can have all kinds of designs decorating them, such as borders of different stitch patterns or various coloured motifs. Decoration can be applied even more profusely if the gansey is knitted in bands of varying colours with different motifs incorporated into each band.

Shown above is a modified version of

a gansey which can be adapted to fit any size or yarn if you calculate your tension (see method given in Knitting chapter 2, page 708). A zigzag border (see fig.5) has been incorporated into the woman's version and the man's version has a band of garter stitch at the top of the sleeves.

If you are planning to use a band of motifs in the sleeves or main section, then you must be sure that the number of stitches that you have cast on will be an exact multiple of the stitches required for each motif. You could use

one of the motifs given here (figs.5,6 and 7) which all require multiples of six or twelve stitches to work out exactly.

Gansey

For a gansey to fit an 86cm (34") chest/bust worked at a tension of 6 stitches to 2.5cm (1") on No.9 needles.

You will need:

450gm (16oz) of Double Knitting yarn. One set of 4 No.9 (US size 5) needles pointed at both ends and No.9 circular Twin Pin, 76cm (30") long (optional).

Use a set of 4 No.10 (US size 3) needles and circular Twin Pin and cast on 204 stitches. Mark the beginning of the round to the right underarm, then work in rounds of single rib for 7.5cm (3").

Change to the set of 4 No.9 needles or circular Twin Pin and continue knitting in rounds of stocking stitch, incorporating bands of motifs if required, until the work measures 40cm (16") from the cast on edge. This is one of the points at which you can amend the length of your gansey. If you are knitting a man's version in say a 96cm (38") chest size, then you will probably need to make it 7.5cm

(3") longer at this point, but this is a matter of choice.

In the same way for each chest size larger than you are making, you will need to add 0.5 to 1.5cm ($\frac{1}{2}$ to $\frac{1}{2}$ ") extra to the armhole length before you start the shoulder shaping.

Now it is time to divide the work for the armholes, so knit across half the number of stitches (102 in this case) for the front and leave the remaining stitches safely on a holder for the time being.

Beginning with a purl row and noticing that you are now working backwards and forwards in rows, continue in stocking stitch until the gansey measures 58cm (23") from the cast on edge, ending with a purl row.

To shape the shoulders cast off 7 stitches at the beginning of the next 8 rows.

Knit 5 rows garter stitch on the remaining stitches, then cast off.

Now go back to the remaining stitches held for the back. With the right side of the gansey facing you, rejoin the yarn to these stitches and knit to the end of the row.

Complete the back armholes so that they match the front.

Sleeves

A point to remember here—if you have added extra length to the armholes say 1.5cm ($\frac{1}{2}$ ") to each one, you must double that amount to give the extra length needed all round the armhole. Here it is 2.5cm (1"). Then add the equivalent number of stitches, 6 in this case, to the cast on group otherwise the sleeve will not fit correctly into the armhole.

These have to be knitted on 4 needles as the smallest length of Twin Pin requires a minimum of 96 stitches, when working at a tension of 6 stitches to 2.5cm (1").

Using a set of 4 No.10 needles, cast on 72 stitches.

Mark the beginning of each round to show the position of the underarm and work in rounds of single rib or garter stitch until the sleeve measures 7.5cm (3") from the beginning.

Change to a set of 4 No.9 needles and continue in rounds of stocking stitch, incorporating bands of motifs if required or working the last 5cm (2") in garter stitch, until the sleeve measures 40cm (16") from the cast on edge.

Again it may be necessary to alter the length of the sleeve. Another 5cm (2") added to the total sleeve length for a man's size will be quite adequate.

Cast off all the stitches quite loosely.

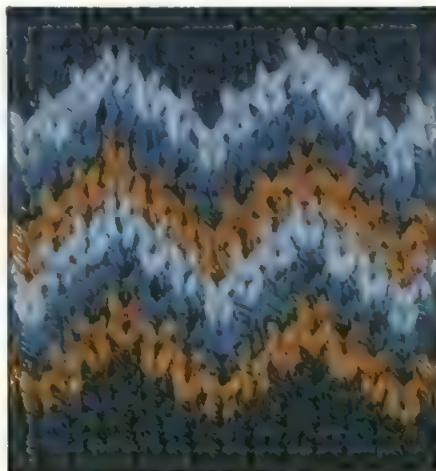
To make up

Join the shoulder seams using a backstitch.

Set in the sleeves.

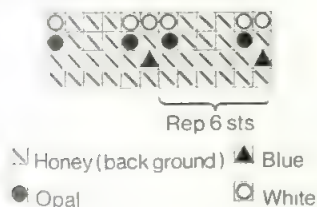
Press the gansey according to the instructions given with the yarn.

Chart for woman's version



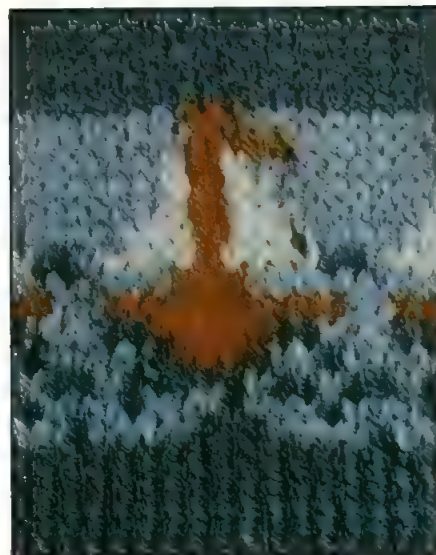
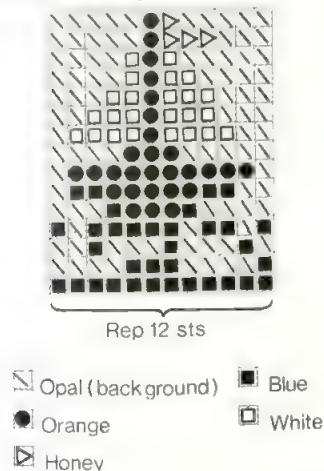
5. Zigzag stripes form border on woman's gansey.

Chart for border motif



6. Small motif looks effective used singly, or repeated at intervals.

Chart for ship motif



7. Nautical subject and colours make a fitting border for a gansey.

Hardwood-uses and varieties



The word hardwood does not necessarily mean that a wood is hard. For example balsa wood, which is very soft, is a hardwood. Generally, broad-leaved trees come under this category. Cone-bearing trees with pointed leaves, such as pine, are called softwood (see Carpentry chapter 1, page 18). Hardwood and softwood therefore denote the two main botanical families of timber.

Softwood, which is generally blonde, is traditionally associated with Scandinavian furniture but in other countries hardwoods are preferred—most antique furniture was made from hardwood. Hardwoods such as oak, mahogany and beech are widely used for furniture because they are attractive, strong and pleasing to work with.

World trade in timber has developed to such an extent that it is possible to buy furniture made from any chosen timber. People generally buy hardwood furniture because, with the exception of balsa wood, hardwoods are harder than softwoods, tend to be stronger and heavier, and can be given a variety of finishes. The main attraction of hardwood is the variety of colour and grain patterns that are available. Unfortunately, hardwood has also become expensive and frequently modern furniture is made from man-made board which has been covered with a hardwood veneer. This makes the furniture economical while still retaining the solid appearance and finish of a hardwood. Some of the more decorative hardwoods such as rosewood and walnut are not readily available but it is usually possible to obtain them in the form of veneers.

The hardwoods illustrated will give you some idea of the different timbers. You will not necessarily be able to buy them from your local timber yard. It is impossible for a timber yard to stock

such a wide range and, of course, it also depends on the availability of the different types of tree.

About hardwoods

The process that begins with a tree in a tropical forest and ends with a plank in a workshop is a lengthy one.

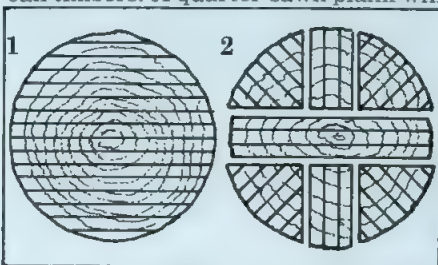
In tropical conditions such as are found in West Africa and Malaysia trees grow quickly and, because they grow all year round, they do not have the marks or rings showing annual growth which distinguish most woods from cooler climates.

Converting logs

Once cut, logs are converted into planks. The logs are generally cut in one of two ways depending on the kind of tree and the use to which the wood will be put.

The simplest, cheapest and most common way, is the slab method (fig.1) where a gigantic saw cuts the log into planks.

The other way is known as quarter sawing (fig.2). It is used to produce attractive surface figuring and with sapele it produces a striped effect which distinguishes it from most other African timbers. A quarter-sawn plank will



1. Slab method 2. Quarter sawing.

keep flatter than a plank cut in slabs.

Seasoning. The planks must be seasoned before they are used otherwise the timber will shrink and warp. The cut logs contain a lot of moisture which

must be seasoned or dried out. This is done after converting the logs into planks. The planks are laid out in a dry atmosphere—large kilns or ovens are used in countries with a high rainfall. Seasoning planks in a kiln takes about two weeks.

Colours. The most readily available hardwoods can be classified into three categories according to their colour: Blonde or straw coloured: ash, oak, beech, ramin, maple and obeche.

Red: utile, sapele, keruing and meranti. The red woods are very similar in appearance and timber merchants often sell them under the general label of mahogany. Try to find out exactly what you are buying as each timber behaves differently especially when joined or finished.

Brown: iroko, afrormosia, teak and elm (light brown). Brown hardwoods are often confused with teak which is generally better known than the others. As for the red hardwoods, try to ascertain exactly what you buy.

Buying hardwood.

You should be able to select a suitable hardwood from a timber yard, ie if you cannot get one of your choice there should be one of a similar colour or grain—if this is more important (the colour can always be changed with wood stain).

Hardwood is sold in various sizes, the timber will be sawn but not planed, ie it will have a rough surface and the overall size will be decreased slightly once the timber is planed to a smooth surface. When you buy sawn timber ask the timber merchant to plane it down for you. Make it quite clear that the measurements you need are for planed timber otherwise the sawn timber once planed might be too small for your purpose. The timber is always referred to by its cross-section and then the length, for example 25mm x 50mm (1"x2"), 1m (1yd) long.

Now, understanding more about hardwoods, you can make any of the projects discussed in the previous carpentry chapters. For example, the shelf units in Carpentry chapter 2, page 102, are very attractive made in hardwood and it will also give you the opportunity to finish the surface with wax or a matt polyurethane varnish to show the hardwood at its best—the choice of finish is optional.

Timber		Colour	Origin	Characteristics	Uses
ASH	1	Yellowish white	Europe Canada	Long grain and elastic.	Tool handles and sports goods.
OSAGE	2	Pale yellow	West Africa	Soft even texture. Light in weight. Nails, screws, stains and polishes well.	Kitchen cabinets and 'white-wood' furniture.
RAMIN	3	Oatmeal	Malaysia	Strong close grain.	Mouldings, picture framing, whitewood furniture framework.
ROSEWOOD	4	Cream or light pink	Europe	Close grained and hard. Excellent for bending.	The most widely used timber in the furniture industry.
DARK RED MERANTI	5	Dark red-brown	Malaysia, Sarawak, Borneo	Uniform grain. Pin holes in some boards.	General purpose hardwood cut for plywood veneers.
SAPELE	6	Red	East and West Africa	Striped effect on some boards. Uneven grain.	Furniture and drawers. Best veneers seen on wardrobes etc.
SEMPUNG	7	Red	Malaysia	Can be sticky with resin. Moderately durable.	Structural work on housing and exterior joinery.
WILLYE	8	Dark red	West Africa	Easier to work than Sapele.	'Mahogany' type furniture construction.
OAK	9	Straw to light brown	Europe, Japan Canada, Australia	Avoid contact with iron, eg steel screws which stain. Strong and reliable.	Used for shopfittings, desks etc. Best wood for facing veneers.
IROKO	10	Light to dark brown	West Africa	High resistance to decay and strong.	Ideal worktop material.
AFRORMOSIA	11	Honey to brown	West Africa	High resistance to decay.	Dining-room furniture. Show parts of upholstered suites.
TEAK	12	Brown, sometimes light in colour	Burma, India	Fire resistant, strong and versatile.	High-class joinery and general carpentry.
ELM (not illustrated)		Light brown	Europe	Long lasting and very strong.	Chair seats, wood carving and coffins.

The golden section

Design know-how 34



Proportion is an essential part of design (Design know-how chapter 33). There is one particularly pleasing proportion in nature, art and architecture. Since the time of the ancient Greeks it has been considered so harmonious and perfect that it is known as the golden section, the golden ratio or the divine proportion.

The golden section is mathematically divided into a ratio of 1:1.618, or roughly 3:5. A rectangle can be drawn in this proportion (fig.1). If you construct a square on the longer side of the rectangle, the new rectangle which you have drawn is itself in golden proportion.

This proportion of 3:5 appears in the human body, for example the top of the head to the throat: the throat to the navel. It can be found in nature as in the spirals of certain flowers and shells (Design know-how chapter 25, page

700) which are built on a 'nest' of golden section rectangles. Leonardo da Vinci is said to have known about the golden section and the ancient Greeks certainly built many of their temples with this ratio in mind (fig.2). Many modern buildings are still constructed in this way.

The golden section is considered very pleasing by most people and you will probably find that the experiment given below is of help when you compose designs and pictures.

To divide a line

See fig.3.

You will need:

Paper, pencil, ruler, pair of compasses, protractor.

Draw a line of any length on the paper (AB). From B construct a perpendicular line (BC) half the length of AB. Join AC.

With the point of the compass at C and radius CB draw an arc cutting CA at E. With the point at A and radius AE draw an arc cutting AB at D. D divides the line AB into golden section.

Experiment

See fig.4.

You can have a great deal of fun arranging and rearranging squares in a 3:5 golden proportion.

You will need:

Thin white card 10cm x 15cm (4"x6").

Thin black card 10cm x 15cm (4"x6").

Strip of black paper 37.5cm x 2.5cm (15"x1") and strip of white paper the same length.

Ruler, pencil, scissors, paper glue and cutting knife such as a Stanley knife.

Cut the black card into three rectangles 5cm x 10cm (2"x4") and repeat for the white card.

Cut the black paper into 2.5cm (1") squares and repeat for the white paper. Arrange five black squares on each white card. Make the patterns different for each one.

Arrange five white squares on the black cards in the same way.

Stick down the squares with glue.

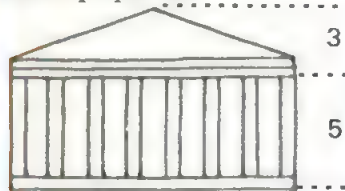
Each rectangle will have a pattern of squares in a 3:5 proportion. You can group the six rectangles together to make a great variety of designs.

5



3

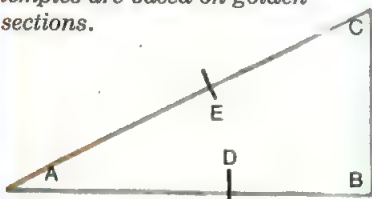
1. A rectangle drawn to the golden section proportion.



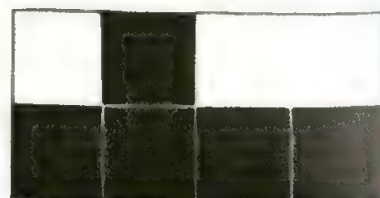
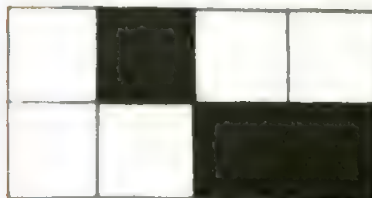
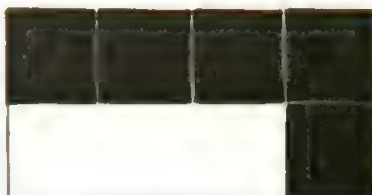
3

5

2. Many buildings such as Greek temples are based on golden sections.



3. The golden section is easily constructed mathematically.



4. The squares in each rectangle are arranged in a 3:5 ratio and the rectangles subsequently grouped together in a design.

Victoria Drew



Creative ideas 34

Sewing cupboard

An old chest of drawers which is beyond repair need not be discarded as totally useless—the drawers can be transformed into a clever storage box to hang on the wall.

To make this sewing cupboard you will need:

Two drawers the same size, the ones shown here are 45cm x 61cm (1½'x2'). An assortment of tin cans, those with replaceable lids such as drinking chocolate or powdered milk tins are best. Also, they must be the same depth or shallower than the drawers. Two strong hinges. Alternatively, piano strip

hinges are recommended for their strength.

Strong adhesive such as Araldite and gloss paint. Wallpaper or felt (optional). Paint the drawers inside and out. If the bottom of the drawer which will show is not especially pretty, cover it with wallpaper or coloured felt.

If the tins have a permanent design, give them a coat of paint too.

Construct a sewing cupboard from tins and drawers salvaged from the waste bin.

When everything is dry decide if you want shelves and arrange the tins inside. Fix the shelves in place with cleats, then glue the tins in position as shown, or arrange to suit yourself. Join the drawers with hinges. Screw cupboard to the wall or attach with brackets.

Building pots with coils

Clay 22



Coiling is one of the basic ways of building up a clay shape. Before the potter's wheel was invented, it was the traditional way of making pots of all kinds. The technique is still used today to make sculptured and modelled forms as well as large and small pots, and it is a peaceful, rhythmic process that can give a great deal of pleasure. The clay is pinched off into balls that are then rolled with the palms of the



1. Flatten the clay to form the base.



4. Place the first coil on the base.



7. Smooth the pot sides with a kidney.



2. Squeeze the clay into a cigar shape.



5. Smooth over it to cover up the join.



8. Fill uneven spots with balls of clay.



3. Roll the shape into an even coil.



6. Lay subsequent coils to the inside.



9. Smooth the rim with a middle finger.

hands to give manageable coils. The coils are then firmly pressed together, one on top of the other, to build up a shape. It is most important that the clay coils are sealed closely to one another so that no air bubbles are trapped between the coils with the subsequent possibility of explosion during firing.

Once the techniques of rolling out the coils smoothly and evenly have been mastered, the coiling process is an easy and absorbing way of building up a variety of shapes.

Coiling a straight-sided pot

A shape to begin with is a small, straight pot of manageable size that gives practice in joining the coils together and controlling the shape of the pot as it rises.

You will need:

1kg (2.5lb) prepared clay.

Plastic sheeting for keeping the pot moist while it is not being worked. Metal kidneys, smooth and serrated: these are standard items of potters' equipment, and are used for smoothing and evening out the walls of the pot.

Wire cutter.

Banding wheel. This is not essential, but it does make the coiling process much easier.

The base of the pot. Divide the clay into two balls, the smaller to be slightly larger than a golf ball.

Press this smaller ball into a circle on the centre of the banding wheel, if you have one, or a suitable working surface if you do not (see Clay, chapter 17, page 762).

Use the heel of the thumb to flatten it into shape as the pot base, which should not be less than 6mm ($\frac{1}{4}$ " thick (fig.1).

Rolling the coil. Work the larger lump of clay between the palms to give a smooth, round ball.

Squeeze the ball gently in both hands to form an even cigar shape, tapering slightly at the ends (fig.2).

Working on a smooth, flat porous surface such as scrubbed wood or canvas, begin to roll the cigar shape into an even coil. Use the base of the fingers, and keep the fingers spread (fig.3).

This does take some practice, but with time it should be possible to produce an absolutely even coil which should be about 6mm ($\frac{1}{4}$ " in diameter.

Break off the coil into convenient lengths, about as long as the circumference of the pot base, and trim the ends with a sharp knife if necessary.

Cover the coils with plastic sheeting until you are ready to use them.

Building up the shape. Place the first coil around the edge of the base, being careful not to stretch it as you lift it up.



A group of decorative coil pots, in soft muted colours, designed by Shirley Brown.

Join the ends by pressing them together, making the coil slightly smaller than the base (fig.4).

Carefully join the coil to the pot base, using the thumb and forefinger to smooth upwards or downwards, whichever is easier, to cover the join (fig.5). Repeat the process on the inside of the pot.

If you are using a banding wheel, rotate it as you work so that the joining process is rhythmical and even.

When the second and subsequent coils are joined on, lay the coil slightly to the inside of the previous one (fig.6). This helps to exclude air bubbles and stops the shape of the pot from splaying outwards.

Continue smoothing the coils into one another as you work—this need not be done after the addition of every row, but it must be done while the inside of the pot is still accessible.

Leave the pot to rest and dry out from time to time as you work—the clay should feel firm to the touch but not leather hard. If you continue building on clay that is too soft, the sides of the pot will sag out of shape as more weight is placed on them.

Cover the top with a piece of loose plastic so that the rim does not get too dry to add the next coil.

If the top coil does crack, smooth across it with a dry finger. Moisture should only be applied if the cracking persists and the clay no longer feels plastic—a quick, even spraying with a fine plant spray should be adequate.

The sides of the pot can also be smoothed and the shape controlled by turning the serrated kidney round it while the palm of the hand supports the other side (fig.7).

This scraping down process helps to show up any unevenness in the clay walls. Fill these by taking a small knob of clay and pressing it firmly into the thin area with the thumb (fig.8).

Smooth the area over with the serrated kidney until it is even. A serrated kidney quickly shows up any irregularities, and the scratched texture that it leaves can be retained as a decorative effect or worked over with a smooth kidney.

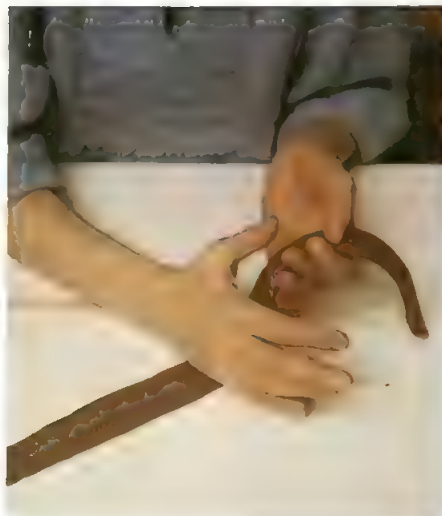
When the pot has reached the height you require, finish it off.

The rim. The rim of a pot is always of particular importance, because this catches the eye first.

When the clay is firm but not yet leather hard, smooth the rim with the right middle finger, holding it with left thumb and middle finger (fig.9). Smooth the rim until it is rounded and even.



10. Bring the shape of the pot outwards.



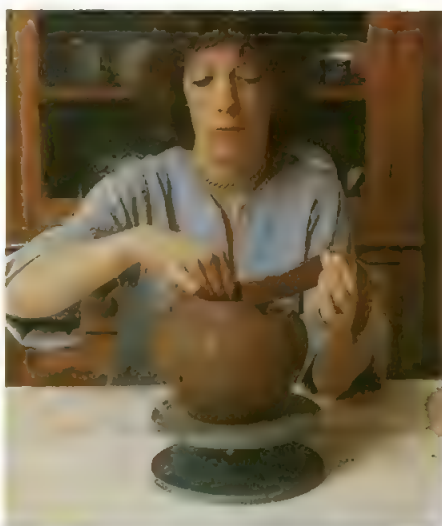
12. Flatten the coil to give a strip.



14. Curving jug handle in to shape.



11. When ready, contract it again.



13. Build up the strips in the same way.



15. Complete upper edge of dish handle.

Finishing the pot. Leave the pot on the banding wheel until it is leather hard, then draw the cutting wire between the base and the wheel to free it.

□ Turn the pot upside down and smooth the base and sides with the smooth kidney, filling in any unevenness with fresh clay, as before. Straight, simple pots like these make attractive flower pots, vases and water beakers.

Coiling a rounded pot

□ Make the base of the pot in exactly the same way as for a straight sided pot and work two or three straight coils on top to start off the shape.

□ When you are ready to bring the shape outwards, begin laying the coils so that they rest on the outer edge of the coil below (fig.10). It is particularly important that the clay should be allowed to dry as you work, or the shape will collapse.

□ When you feel that the pot has been expanded sufficiently, contract the shape again by placing the coils well

towards the inner edge of the preceding coil (fig.11). Continue until the pot is a satisfying, well-rounded shape.

The neck. If you wish, smaller and thinner coils can be built on to this rounded pot to form an attractive, flared shape. This process is described in Clay chapter 17, page 764.

Alternative coiling technique

Once you have learnt the basic coiling method, more adventurous shapes can be attempted.

Interestingly, it is possible to make really large pots by the coiling method that would be difficult to make in any other way. Big jars and bottles, for example, are particularly attractive and look effective in the corner of a room or on a terrace. Use them for their decorative value, or fill them with dried grass or flower arrangements. To make large pieces like these, large coils should be used and even greater care must be taken to let the clay dry as you work.

Wider coils. Take a ball of clay big enough just to be held comfortably in two hands. Squeeze it into a cigar shape, this time about 2.5cm (1") in diameter.

□ Roll the coil out smoothly in the same way, then flatten it with the side of the hand to give a long strip about 4cm (1½") wide (fig.12). Lift the coil up as you flatten along it to stop it sticking to the working surface.

□ Build up these larger coils in the same way as for a rounded pot (fig.13), sloping them outwards to expand and inwards to contract the pot.

□ The pot grows much more quickly using coils like this, and it is also easier to keep the walls thin and even. It is, however, more difficult to control the shape of the pot as it grows, so it is best to master the small circular coil technique first.

Coiling round a mould shape

If you find it difficult to achieve a satisfactory shape while concentrating on joining the coils together properly,

practise by coiling round a suitable regular mould shape.

If the mould is solid, you will only be able to achieve a shape that expands from the base, or it will be impossible to extract the mould once the coiling is finished.

It is possible, however, to build an attractive rounded shape by moulding round a balloon or inflatable rubber ball. Build up the coils in the same way as for a rounded pot making sure they are well sealed from the outside. When the clay has dried out, deflate and remove the balloon and the clay shape will support itself. Smooth the inside and outside with a kidney. You could tap the bottom with a flat piece of wood or butter pat to flatten out a suitable base for the pot.

Coil pots for the kitchen

Coiling is an excellent way to make all kinds of pots and dishes for the kitchen. Build up open serving dishes using rolled-out slabs for the base. Deep or shallow casserole dishes can be made, with lids from a shallow press mould (this technique is described in Clay chapter 13, page 538). Bowls, beakers and jugs are also ideally suited to the coiling method.

It is important that the handle to a jug or dish should be the right size and shape to complement the shape of the vessel. Notice the lines of the pot, and add a curved handle to a full shape, a small knob to a straight-sided casserole.

Jug handle. The jug shown here has a rounded shape, and a curved handle goes well with the line.

□ Roll out a coil of clay and instead of flattening it with the side of the hand in the usual way, pull your thumb firmly down centre to make a rim either side.

□ Smooth the edges, and leave the handle to harden a little.

□ When you have decided exactly where to fix the handle, score both surfaces and coat them with slip. Position the top end of the handle strip and press it firmly in position. Smooth over with the smooth kidney to hide join.

□ Curve the handle to the shape you require, and fix the bottom end in the same way (fig.14).

Dish handle. Flatten out a small slab of clay, then cut out a semicircle of the size you require. The straight edge can be trimmed if a smaller shape is required.

□ Bend the piece of clay slightly to give the handle a convenient curve. Score the surfaces to be joined, coat with slip and press together firmly.

□ Use a wooden modelling tool to complete upper surface of join (fig.15).

□ Finish off by smoothing the surface of the clay around the join.

Jug lip. When you have completed the rim of a jug, leave it until the clay has hardened slightly but still retains its malleability.

□ Wet the forefinger of the right hand and with the left hand supporting the opposite side of the jug 'pull' out a lip, shaping it as you do so with the thumb and second finger (fig.16).



16. Pull out a 'lip' shape for the jug.

Decorating coil pots

Coil pots can be decorated in any of the ways described in preceding chapters, but they have a simple

quality that looks well with hand texturing and muted colours.

You may prefer to reveal the way in which the pot was constructed by leaving the coils unsmoothed on the outside—this looks particularly effective on smaller items if you have used the circular coil method. The inside of the pot should be smooth, however, for easy cleaning if it is to be used for holding food, and food utensils should also be glazed on the inside.

You could also make a design feature of the bold thumbprints created as you join the coils together, or smooth away with a serrated kidney for a rough textured effect. Impressed and incised patterns can also look most attractive if they are confidently and boldly executed.

To enhance the simple effect, try muted oxides or soft glaze colours to complete coil pots. The shape is often attractive enough itself to require no more than a subtle complementing colour.

The coiling method is ideal for making kitchen utensils. The casserole dishes, vase and unfired cream jug in this group were designed by Shirley Brown.



Border patterns for ganseys

Yarn — knitting 5



Discover the possibilities of using multi-coloured oddments of yarn to make interesting border patterns. All-over stripes in different designs and colours are a fascinating way of decorating all kinds of garments and things for the home. Or single borders can be used to highlight a jacket yoke, hem or sleeves.

Whether you create your own designs or use the ones shown in this chapter, your work will have your own individual touch. There is an infinite choice of colours and pattern variation to make your knitting a personal record of fun and creativity.

Planning your own design

Knitting chapter 4, page 946 dealt with knitting in rounds to produce a jersey with the minimum of seaming. It also gave details of adaptable multi-coloured patterns.

The child's version of a gansey seen in this chapter is an example of the kind of garment you could easily make with very little skill and lots of imagination with colours and patterns.

Border motifs shown here (figs.1-6) plus the three patterns given in the previous chapter have all been incorporated into the gansey, with rows of stripes between to achieve a kaleidoscope of shapes and colours.

You do not have to knit the child's jersey in rounds, but can work the front and back separately in rows of stocking stitch, providing that you look out for the following points.

Multiples of stitches. To achieve perfect results all the patterns that you use must work out exactly into the total number of stitches cast on for each section. Otherwise you will be left with untidy row ends which will not match up with the opposite side to form a complete repeat of the pattern. To make things easy all of the patterns shown here are based on multiples of two, four, six or twelve stitches which will all divide equally into a number of stitches divisible by twelve.

Thickness of yarn. Making ganseys in various colours and stripes is an economical way of using up any oddments of yarn that you may have had left over from knitting other garments. This is providing that all the yarn is of the same thickness, such as 4 ply.

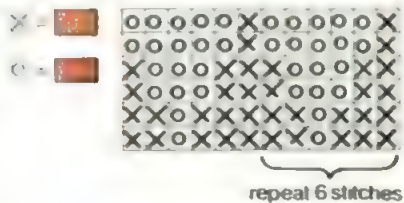
Left: you can use borders and motifs to decorate many items shown in previous chapters . . . for a big work bag, made from patches or strips . . . for a man's gansey, with bands of contrast colour between the border patterns . . . for the jersey in Knitting chapter 2, page 708. You can enlarge the charts (chapter 3, page 740) as shown here on the child's gansey—or add colourful stripes to a scarf or cushion.



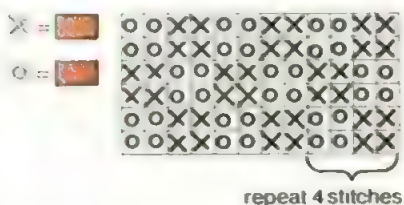
Six border patterns seen from front (right) and back (far right)



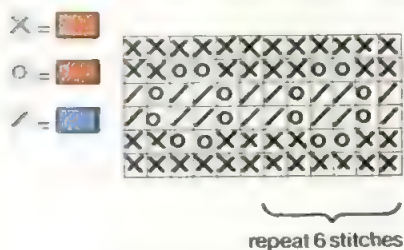
1. Chart for spot border shown right.



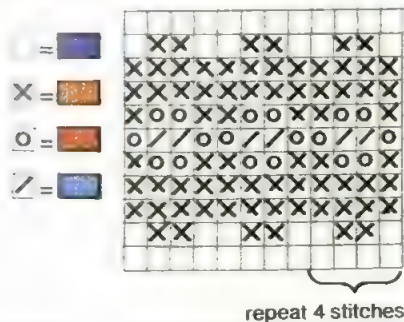
2. Chart for pyramid border, right.



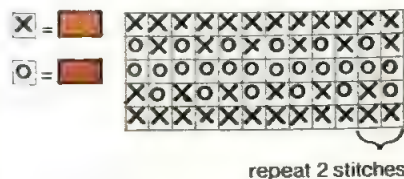
3. Chart for check border shown right.



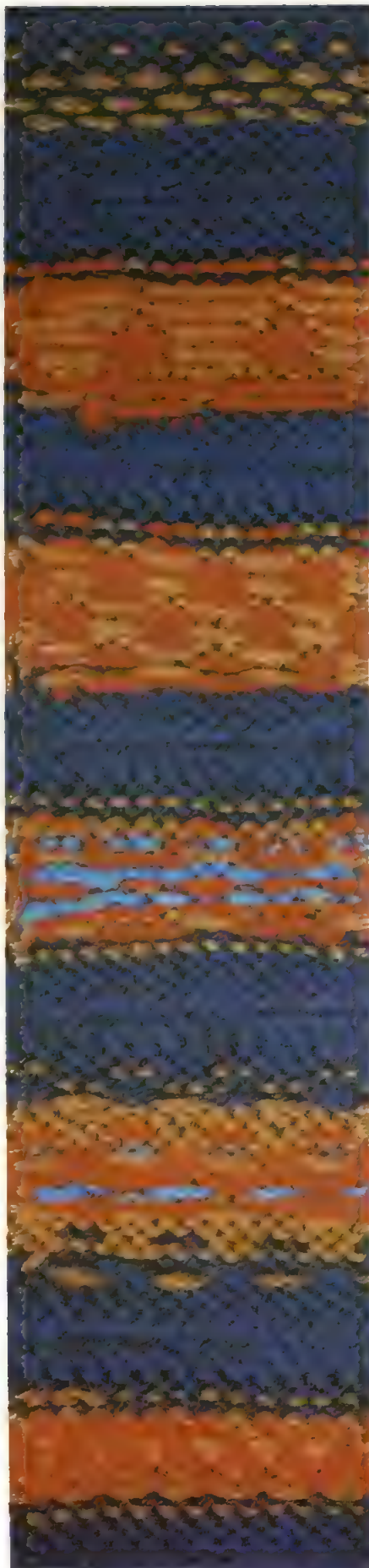
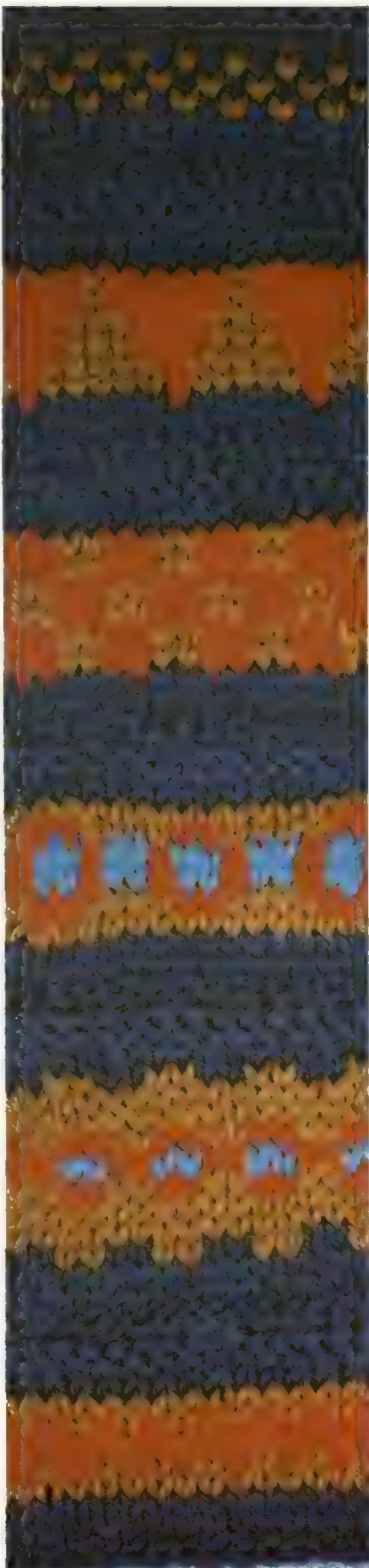
4. Chart for 'ribbon slot' border, right.



5. Chart for 'bicycle chain' right.



6. Chart for 'lightning' border, right.





Checking length of yarn. The best way to gauge what length of yarn is necessary to complete a row is to hold the yarn across the full width of stitches three times in all. If the knitting measures 30cm (12") across, you will need a length of yarn measuring about 90cm (36") to finish the row.

Working with two colours. When you are using two colours to work a pattern within the same row, remember to carry each colour loosely across the back of the knitting until it is required again.

The correct way of carrying two colours across a row is to keep one colour to the top and one to the bottom throughout. In this way the yarns do not become tangled and the knitting looks as neat and even on the back as it does on the right side (figs. 7a and b).

Child's gansey

For a gansey to fit a 61cm (24") chest worked at a tension of 6 stitches to 2.5cm (1") on No.8 needles.

You will need:

Total of 300gm (10½oz) in oddments of Double Knitting yarn.

One pair No.8 (US 6) needles.

One pair No.9 (US 5) needles.

3 small buttons.

For the back, take a pair of No.9 needles and any colour, which will be the main shade and is coded as A, and cast on 72 stitches.

☐ Work in single rib or garter stitch, whichever you prefer, for 2.5cm (1").

☐ Change to the pair of No.8 needles.

☐ Continue working in stocking stitch, beginning with a knit row (this is usual so that the right side of the work is immediately facing you) and working in stripes and bands of pattern as required, using the charts shown on previous spread.

☐ When the work measures 23cm (9") from the cast on edge, ending with a purl row, mark each end of the row with coloured thread to denote the beginning of the armholes.

For each child's size larger that you are making, it is usual to add an extra 2.5cm (1") in the body length up to the armholes and another 1.25cm (½") in the armhole depth.

☐ Work more patterns until the knitting measures 35cm (14") from the beginning, finishing with a purl row, then cut off all the colours except the main shade A.

☐ Continue knitting with A only and shape the shoulders by casting off 7 stitches at the beginning of each of the next 6 rows.

An ideal way of using up oddments of yarn—the child's gansey seen left is an adaptation of the ganseys in the previous knitting chapter and is decorated with a galaxy of border patterns.

Steve Bucknell



7a & b. Back view of colours carried correctly (top) and incorrectly (below).

Knit 3 rows of garter stitch on the remaining 30 stitches.

Cast off all the stitches loosely.

For the front, work in the same way as the back, keeping the pattern sequence and colours in the same order so that the patterns will match at the side seams.

For the sleeves, using the No.9 needles and A, cast on 60 stitches.

If you have added any extra depth to the armhole, remember to make sure that the sleeves will fit into the armholes by allowing 6 stitches for every 2.5cm (1") added all round armhole.

☐ Work in single rib or garter stitch, depending on which stitch you have used on the back and front welts, for 5cm (2"). Half of this measurement will form a turned back cuff.

☐ Change to the pair of No.8 needles.

☐ Beginning with a knit row, continue working in stocking stitch and bands of pattern and stripes until the work measures 28cm (11") from the cast on edge, finishing after a purl row.

☐ Cast off all the stitches loosely.

To make up. Join the pieces as follows using a backstitch throughout (except for ribbing which should be oversewn).

☐ Join the right shoulder seam.

☐ Join the left shoulder seam for 1.25cm (½") from the armhole edge. The remainder of the seam forms the neck opening.

☐ Set in the sleeves by sewing the cast off edges around the armhole edges between the markers.

☐ Join the side and sleeve seams.

☐ Make 3 button loops with button-hole stitch at regular intervals along the left front shoulder edge.

☐ Sew the buttons on to the left back shoulder edge to correspond with loops.

Beginning screen printing

Colour —
printing 13

Of all printing methods screening or serigraphy is the most versatile in its applications. It is used on paper for posters, pictorial prints and wall-papers, on fabrics for both dresses and furnishings, on wood, plastics, glass, metal and ceramics. In spite of this it is one of the simplest ways of printing and impressive results can be achieved at home.

Basically silk screen printing is a super-efficient stencilling process. The stencil is put beneath or on a meshed fabric that has been stretched across a frame. (The mesh rests on the surface about to be printed.)

By pulling an implement called a squeegee across the top of the mesh, ink is forced through it on to the printing surface below in all areas except those blocked by the stencil. This makes the print. The manoeuvre is quick and simple so that once the equipment is assembled a number of prints can be made much more quickly than with ordinary stencils.

Development of screen printing

Stencils can be rather complex affairs with several parts held together by fine 'bridges' that inevitably show up on the final print. Furthermore, it is time consuming to lay them out correctly for each printing, especially if they are in several sections.

In the 18th century, Japanese stencil cutters began to use hairs to connect the different sections of a stencil since these left only the finest lines on the print. They subsequently evolved a more elaborate system of attaching stencils to a grid of fine hairs stretched across a frame. In the mid-19th century this grid was replaced by silk and silk screen printing was the result.

Nowadays, silk screen printing is a highly mechanized process. It is one of the most prevalent ways of decorating manufactured cloth and several types of stencil have been developed, including complex photographic ones.

This chapter is devoted to the use of

ordinary paper stencils for screen printing on single sheets of paper. Other forms are discussed later but no matter what type of stencil or surface is used, the basic printing process remains the same.

Equipment

Although the equipment used in screen printing seems complicated at first glance it is really very simple and once the essential items are at hand they can be used again and again to make prints on all sorts of surfaces using different kinds of stencils and inks.

Basically, equipment consists of a screen, eg a wooden frame with meshed material stretched across it, a squeegee, printing colours and the stencil. Screen printing kits containing all these elements are on the market or you can assemble them at home. If you intend to do a lot of printing then it is advisable to make your own screen and squeegee. If you buy one choose a size big enough to accommodate a variety of designs.

To make a screen

The screen is a sturdy rectangle of wood with a meshed fabric stretched across it. It must be larger than your design and can be made to any dimensions, but 33cm x 38cm (13"x15") is a useful size for repeated use of different motifs.

You will need:

4 lengths of 40mm x 40mm (1½"x1½") planed, straight-grained, knot-free wood; 2 pieces 25cm (10") long and 2 pieces 38cm (15") long.

Panel pins.

Waterproof glue.

.5m (½yd) terylene screen fabric.

Staples and staple gun or drawing pins for attaching the fabric.

Hammer, sandpaper.

To make the frame, glue and then nail the wood together with panel pins to make a rectangle (fig.1). Any unevenness must be planed off as the screen should lie flat on the base.

Smooth off the edges with sandpaper.

Mesh. Terylene screen fabric is recommended for stretching over the screen frame as it is tough and long lasting. Special terylene mesh can be bought in different gauges from screen printing suppliers and a medium gauge is recommended for general purpose printing for beginners. Cotton organdie is often used but has the disadvantage of tearing rather easily while nylon has the drawback of sagging when wet. Silk,

Screen printing is a fast way of printing with stencils. By pulling ink across a mesh-covered screen with an instrument called a squeegee the areas of the printing material beneath which are not blocked by the stencil will print.



the material used originally, is ideal but expensive.

Taping

To prevent ink seeping through the corners of the frame apply gummed paper tape to both the outside edges and the inside ones. On the inside edges fold the tape to fit along the upright side of the wooden frame as well as the flat surface of the fabric. It is advisable to apply a second strip overlapping the first strip at the top as shown (fig.3) to make a 'well' for the ink. As the tape dries it shrinks slightly and so stretches the screen even more tightly. If the tape is to be preserved through several washes it will be necessary to seal it with a coat of varnish.

Squeegee

This is the instrument used to pull the ink across the screen, forcing it through the mesh on to the printing surface. The squeegee consists of a length of doorstop rubber screwed between two pieces of wood with a longer bar glued and nailed across the top to allow the squeegee to rest in the frame when not in use.

2. To make a printing screen meshed fabric is stretched across the frame.

3. For printing on sheets of paper a base board is recommended. It helps you position each sheet correctly and assures a flat printing surface.

1. A screen printing frame consists of four pieces of wood nailed together.

To stretch the fabric over the screen cut it to a size 5cm (2") larger all round than your frame.

Using a staple gun (or drawing pins) tack the fabric to the frame at the centre points on each side (fig.2). Make a double turning along the fabric edges to give more strength and be sure that the mesh is pulled tightly and that the fabric grain is straight. Use your wooden frame as a guide. Continue to stretch and tack down the fabric along the edges working from the centre points outward. Corners should be neatly turned and tacked down.

The base and hinge bar

The material to be printed must rest on a flat, smooth base, and for printing on sheets of paper it is advisable to make a base which can be attached to the screen frame (fig.3).

You will need:

A piece of 40mm x 40mm (1½"x1½") planed wood, 33cm (13") long.

2 sets of detachable butt hinges with removable pins and of a size to fit on wood frame as shown.

Screws to attach hinges.

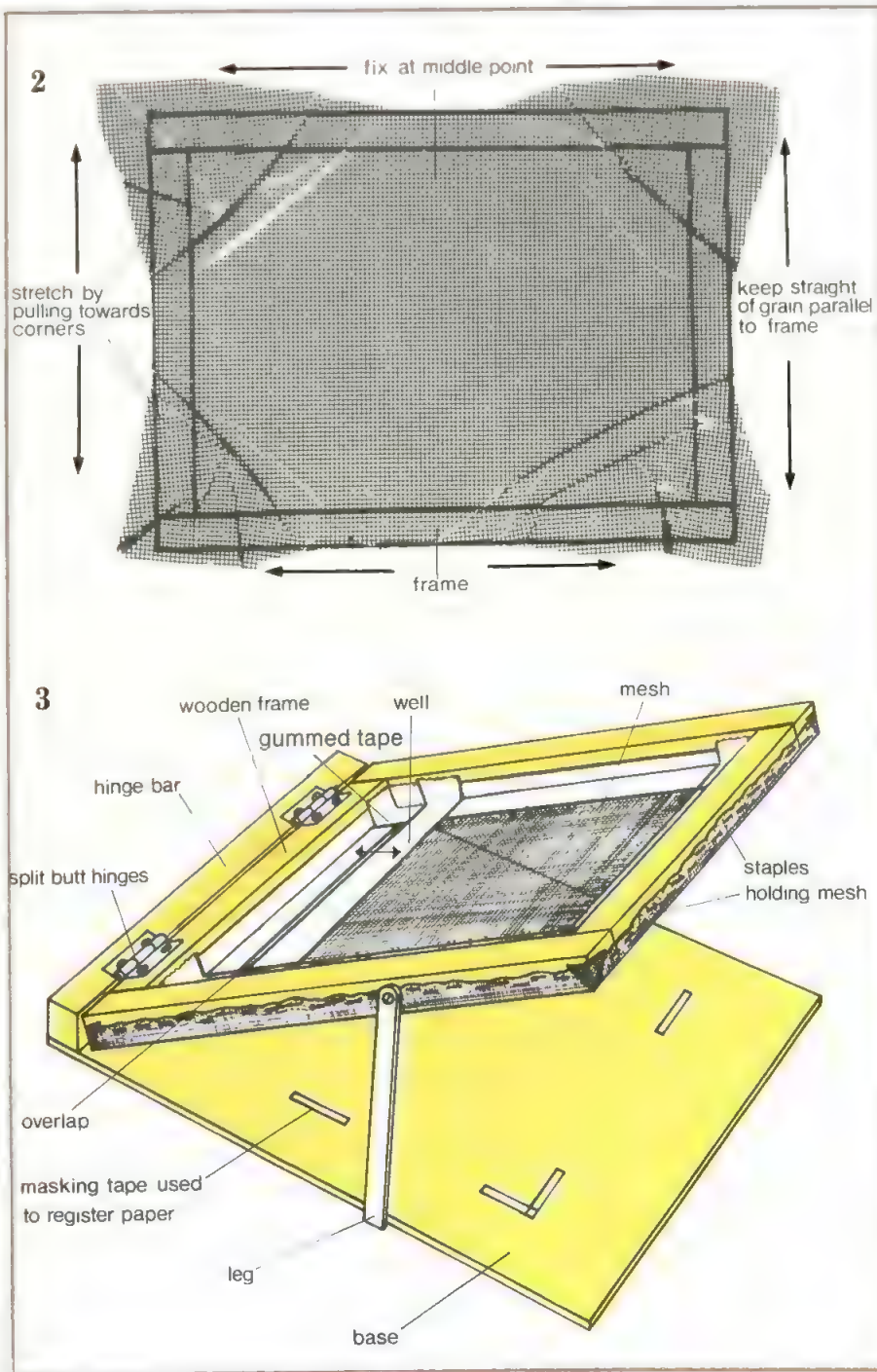
Base of plywood, chipboard or block-board 33cm x 42cm (13" x 16½").

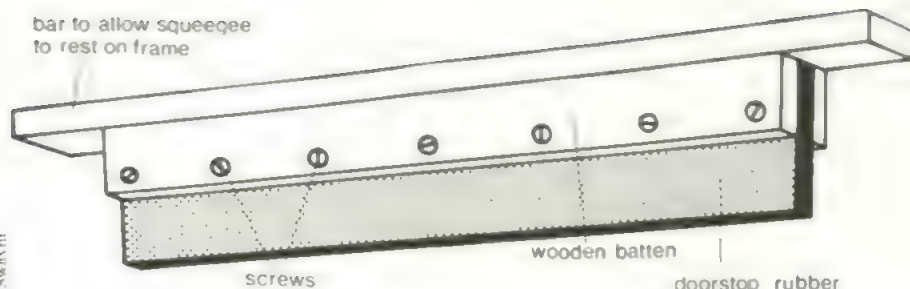
Perforated metal 'leg' or hinge bar about 30cm (12") long and washer and screw.

Nail the length of wood to one 33cm (13") end of the base (fig.3).

Lay one short edge of the frame alongside the bar. Place the opened hinges in position as shown in fig.3 and screw in place. Insert the hinge pins to hold hinges together. These can be easily removed when the screen needs to be taken apart for cleaning.

A 'leg' (fig.3) screwed into the side of the frame, so that the screen stands up firmly on its own, is a useful addition.





4. A squeegee is used to pull ink across the screen. It can be made or bought.

Squeegees should be about 2.5cm (1") narrower than the inside of the frame. Squeegees can be bought or you can make one.

You will need:

25cm (10") length of doorstop rubber. Two pieces of planed wood, each 25cm (10") by 20mm ($\frac{7}{8}$ ") by 10mm ($\frac{3}{8}$ ").

One piece of wood 35cm (14") by 20mm ($\frac{7}{8}$ ") by 10mm ($\frac{3}{8}$ ").

Panel pins, screws, waterproof glue.

Lay the length of rubber between the two shorter lengths of wood and screw the three thicknesses together (fig.4). Glue the longer bar to the top of the squeegee as shown.

Printing colours

The colour used for screen printing must be of the consistency of thick cream and while pigments suspended in binders of several kinds can be used special oil based screen printing inks are best for paper. Fabric dyes in paste form can be used on paper and cloth but on paper they are not waterproof so they would be unsuitable for something like a poster.

Special inks and dyes are available from screen printing suppliers and from some art supply shops.

You will also need white spirit for cleaning up and mixing oil based inks.

Stencils

The paper stencil is the easiest way of making a screen print. Use a thin paper—newsprint is quite suitable—and cut a sheet the same size as your screen. Draw your design, which can be of quite simple shapes, and transfer it on to the newsprint with carbon paper. Cut it out with a sharp craft knife or scissors, depending upon the type of design and paper used.

This is a traditional stencil. The sections which are removed will print. However, an advantage over traditional stencilling is that with a screen isolated areas do not need 'bridges'. The screen holds them in place.

Printing on paper

The cat (below) is easy to cut out and is a good motif to make as you learn how to screen print. By employing it to make a number of prints—greeting cards, for example—you will soon see the advantages of this medium over ordinary stencilling.

Cut your stencil as described above from sheet of paper the size of screen. Tape outer edges of the stencil to the frame with a small piece of masking tape on each side. The screen will normally hold the stencil in place by



Janet Allen

Trace pattern for cat motif.

pressing it against the printing surface and the ink will secure it further, but it is wise to secure it to prevent mishap. The separate centre bit can be attached to your screen with a dab of all purpose glue such as Copydex. This can be put in the right place by placing the trace pattern under the screen and then, looking through the screen to help you position it.

Next, arrange a place for your wet prints to dry. A line across the room with clothes pegs to hold the prints is perfectly suitable.

Screen printed designs give special character to notepaper. By Janet Allen.

Paper stencil cut outs can make very decorative prints, as in this flower-basket design used on a scrap book cover. The zig-zag border was cut with pinking shears. By Janet Allen.

Cut your printing paper to size, allowing a margin all round. You can use coloured or white paper as you prefer.

Positioning. To determine the position of the print on the paper, centre your original trace pattern (or drawing) on a sheet of printing paper. Place this on the base board and line it up with the cut stencil by looking through the screen as already described. The drawing covers the area which will print.

To make sure the printing paper is always in the correct place you must make some little registration guides. To do this stick strips of masking tape to the baseboard alongside the edges of the first sheet and these (fig.3 page 963) will assure correct placement for subsequent prints.

To print. If you are using screen printing inks you must first thin some colour in a jar by adding a little white spirit to give the consistency of thick cream. (Paste dyes need no additives.) Slide a piece of paper into position. Lower the screen on to it and place the squeegee at hinged or 'well' end of the screen 2.5cm (1") or so away from the end wall.

Pour a line of ink into this channel between the wall and the squeegee. You will need to be quite liberal with the ink but after printing unused ink can be returned to the container. With the hinged end of the screen away from you hold the squeegee in both hands and put it against the edge (fig. 5) so all the ink is ready to be pulled towards you. Slope the squeegee a little towards you and pull it firmly right to the opposite end of the screen, applying even pressure.

Now, scoop up any remaining ink with the squeegee and carry it back to the top of the screen.

Lean the squeegee away from you. The handle will support it against the sides of the screen. Raise the screen to the side prop, extract your print and hang it up to dry.

Repeat the process with the next printing and continue until you have sufficient prints.

Cleaning up

To clean the inked screen when printing is finished put some newspapers under the screen. Scrape out any surplus ink with a palette knife or old table knife and store it for future use. Tear off the paper stencil and discard it.

Pour some white spirit on to the screen



Steve Bucknell

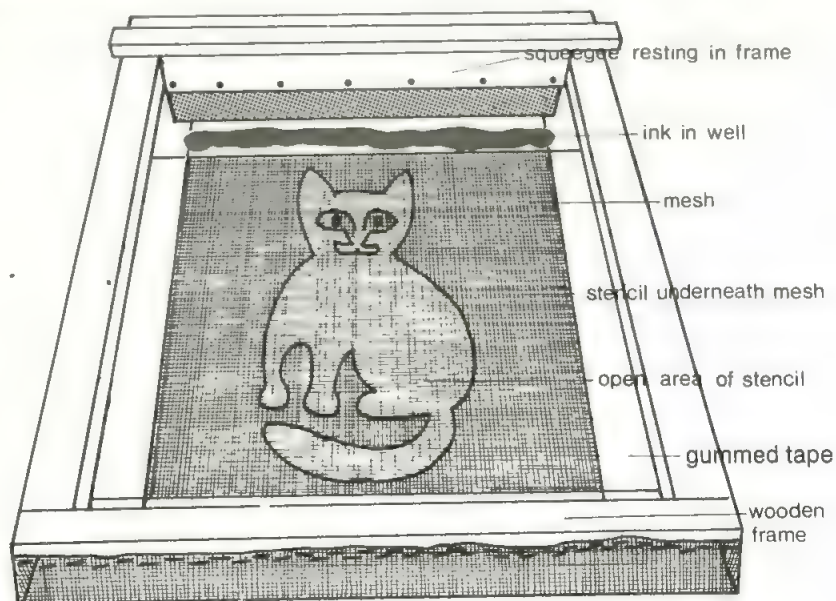
and clean thoroughly with a rag. Rub well on both sides and keep renewing both rag and newspapers.

It does not matter if the mesh of the screen has been stained by the printing colour but it is essential to get the screen completely clear. Check this by holding it up against the light. If the screen is left blocked it will be unsuitable for future work. Make sure all the ink is removed from the corners

of the frame too. Don't forget to clean the squeegee and the knife.

Dye. If you have been printing with dye the cleaning-up procedure is slightly different. Take the screen off the baseboard and tear off the paper stencil. Scrape out any dye left over. Run cold water on to the screen and clean it inside and out with a sponge.

Give it a good wash with detergent and warm water. Wash squeegee and knife.



Chris Swayne

5. Screen ready for printing with stencil beneath, ink in well and squeegee.

Hand-stitched cushions

Cloth —
quilting 4

Quilted cushion

A quick way to add an elegant touch to a cushion cover is to decorate it with a simple, but effective quilted design. The cushion cover is made the same size as the pad (not 1.5cm (½") smaller all round).

You will need:

10cm x 60cm (16"x24") cushion pad.
1.15m (1½yd) of 90cm (36") wide fabric.
50cm (½yd) of 90cm (36") wide muslin for backing the quilting.

50cm (½yd) of 110gm (4oz) synthetic wadding at least 70cm (28") wide.

Matching or toning thread for quilting.

Matching thread for making up.

Dressmaker's carbon paper.

Tracing paper.

Home made quilting frame 50cm x 70cm (20"x28") or a slate frame.

Drawing pins.

□ Cut a piece of top fabric for cushion front 50cm x 70cm (20"x28"). Cut muslin and wadding to the same size.

Note: the fabric for the cushion front, wadding and muslin are all cut 5cm (2") bigger all round than the finished size of the cushion and then trimmed to match the cushion back, because the quilting will probably decrease the width and depth of the fabric.

□ Enlarge the design for quilting (overleaf) on to tracing paper until it is

approximately 35cm (14") high (see Design know-how chapter 4, page 112).

Transfer the design centrally on to the piece of top fabric to be quilted in the same way as for the bird motif (Quilting chapter 3, page 938).

Tack the muslin, wadding and top fabric together.

Attach the work to the home made frame with drawing pins placed about 1.5cm (½") in from the edge, if used (fig.1).

Alternatively set up the work in a slate frame (Quilting chapter 3).

Quilt as for the bird motif, begin with the leaves then work the petals, the flower centres and finally the stems.

Cut a piece of top fabric for the back of the cushion 43cm x 63cm (17" x 25").

□ Place quilted fabric and cushion back with right side facing and trim the quilted piece level with the back piece.

□ Make up into a cushion (see Sewing, chapter 6, page 400), trimming away wadding close to stitching before turning cushion through to right side.

Right: a cushion, like the one shown here, is an ideal first project for working hand-stitched quilting. The pattern for the quilting is overleaf.



1. The work attached to a home made frame with drawing pins.





Pattern for quilting cushion on previous page.

Trevor Lawrence



Pattern for quilting cushion at bottom left of facing page. Enlarge the design to the required size.



Right: pattern for quilting cushion at bottom right of facing page. Enlarge the design to the required size.



Patterns for the quilting on the two cushions in the photograph below are shown on the facing page. Quilting looks particularly effective on silk or satin.

Above: two more beautiful, hand quilted cushions. Choose the design you prefer, decide on the size and then quilt and make up in the same way as described for the rectangular cushion.

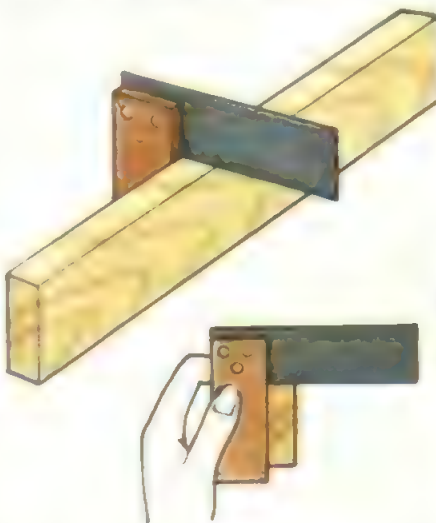


Planing, and simple joints

Wood —
carpentry 14

We have the pleasure of seeing and feeling the natural beauty of hardwoods every day and can learn to recognize a wide variety by their colour and grain pattern (Carpentry chapter 13, page 950). And because they are strong we can appreciate their usefulness. However, it is only through cutting and working with hardwoods that one appreciates their characteristics. It is usual to buy hardwood which has been machine planed on both sides (PBS). Do remember to specify PBS when buying hardwood and ask the machinist to plane one or both edges as well. Despite the fact that the timber merchant will plane the timber for you, you might still need to trim it yourself, for example, if you are constructing joints you need to work very accurately to get good results. So, although the timber has a smooth surface you might still have to trim it yourself for a specific purpose. To work accurately use a carpenter's square to check that one edge is square, ie at right angles to the side (fig.1).

Use the marking gauge against this edge to mark the exact width that you want the wood to be. This is most important when two pieces of wood need to be exactly the same width.



1. Before trimming a piece of wood check that the edge is square.

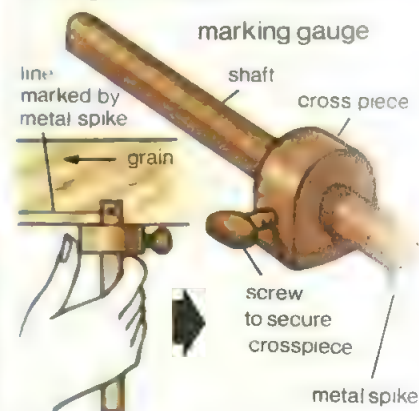
Tool box

Marking gauge

This simple wooden tool scribes (scratches) a line along the grain parallel to the edge of or side of a piece of wood. It is used when a piece of timber has to be trimmed to a particular width or thickness.

The marking gauge consists of a wooden shaft with an adjustable crosspiece sliding up and down it. At one end of the shaft there is a metal spike.

The crosspiece is set to the required distance from the spike. The tool is then moved along the side or edge of the wood. The metal spike will mark a straight line with a constant distance from the side or edge as the crosspiece keeps it in position. Always slide the marking gauge against the grain, so that the slope of the grain holds it in position.



Planes

A plane is used to smooth the surface of a piece of wood, or to trim it down to a required size leaving a smooth surface.

There is a variety of planes available, each having a specific function.

A **bench plane** is available in three lengths. The short one is a smoothing plane for smoothing already flat timber. The medium length is a jack plane and is used for shaping rough wood. The long plane is a trying plane for creating an accurate flat surface.

A **block plane** cuts very cleanly and is only used to cut end grain.

All the above planes cut with a blade referred to as a plane iron, which must be sharpened occasionally.

If you are only doing the occasional bit of carpentry you will not want to buy all the special purpose planes available.

Replaceable blades

A useful plane is one that has replaceable blades, ie once the cutting edge is blunt the blade is thrown away and a new one inserted—like a razor blade. The blades are available with a straight

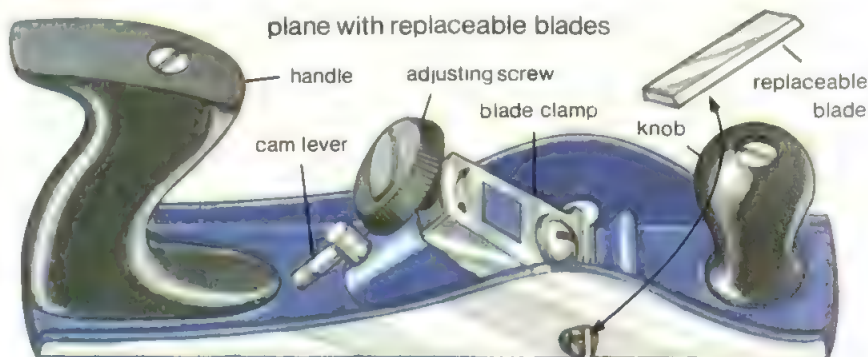
edge or a curved edge which does make the plane more versatile.

A straight edged blade is used to trim and smooth edges where only a small amount of timber has to be removed.

If more than 3mm ($\frac{1}{8}$ ") of timber has to

The **adjusting screw** moves the blade further out of the plane to increase the depth of the cut.

The **blade clamp** and the adjusting screw hold the blade parallel to the flat bottom surface of the plane. This is



be removed a carpenter will use a jack plane, but a blade with a curved edge will do exactly the same thing. The straight edged blade will remove only a small bit of wood on each stroke. The curved blade will speed things up.

very important so always check the blade before planing.

The **cam lever** releases the blade.

The **clamping screw** should not be too tight otherwise any adjustment to the blade will be difficult.

Planing

Hold the wood in a vice or clamp, protecting the wood surface if necessary with a piece of waste wood.

Trim the length of the timber first and make sure that it is at right angles to the sides.

Trimming to length

A piece of timber might be a fraction too long or have a rough end (end grain) which you want to smooth. You can use a plane to do the job but it must be done carefully. Practise on a piece of waste wood first.

Ideally you need a block plane. If you are using a plane with a replaceable blade make sure that the blade is sharp, use a straight edged blade, and set it as fine as possible, that is to remove a very thin bit of wood.

The problem with planing end grain is that once the blade reaches the end of the piece of timber it can rip and splinter the end of the wood. To avoid this hold the timber in a vice and trim to the marked line working towards the centre from both edges (fig.2). In other words you will be planing at a slight angle, working towards the centre and never going across the entire length of the timber. Work in stages, a few strokes from either edge, then work towards the centre until the edge is straight.

Working along the grain

Keep the plane level—not an easy thing to do when the experience is new—and make certain that you do not plane below the marked line.

Avoid rounding the edge on a long length of timber. Put more pressure on the front of the plane (the round knob) at the beginning of the stroke, and at the end, apply more pressure at the back (handle).

Before you get down to the marked line use the carpenter's square to check that the side or edge being planed is at 90° to the adjoining side. Make any adjustment necessary and plane down to the marked line.

Always work in the direction of the grain (fig.3) If you plane against the grain you will end up with a heavily pitted surface which is difficult to finish well.

Planing large flat surfaces

The quality of machine planing can vary enormously and if a timber merchant has used sharp cutters, finely set, the timber surface should be good. If it has been done carelessly the surface will not be very good so it is always wise to check the surface when buying timber.

A well planed surface will only need a bit of fine grade glasspaper along its grain to finish it before polishing.

If the timber surface is pitted or rough and you want to smooth it, fit a new straight edged blade in the plane. Make



Dick Miller

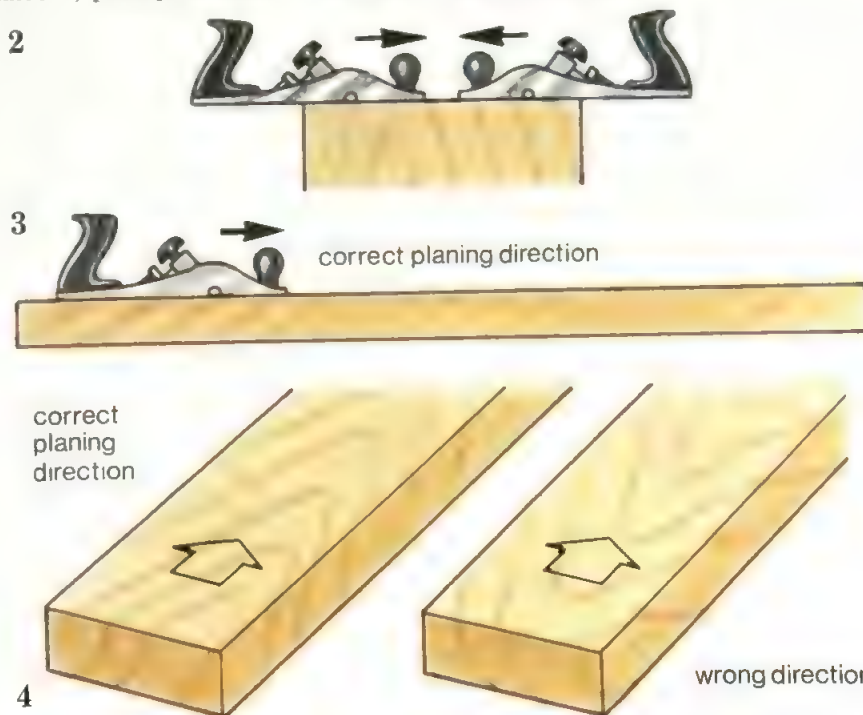
sure it is parallel to the flat surface of the plane and that it is set as finely as possible. Test it on a piece of waste wood.

Check the direction of the grain by looking at the edge of the piece of wood (fig.4). Plane in the direction of the grain with firm even strokes. If you plane against the grain you will roughen the surface.

If a piece of timber is difficult to smooth, perhaps because of awkward

The plane is held as shown and pushed with firm, even strokes.

grain or bad handling, you can use a proprietary wood filler at this stage to improve the surface. Do this carefully and follow the manufacturer's instructions. You can then finish it with a high gloss polyurethane varnish. If you want a matt finish the surface of the wood must be good without the use of a wood filler.



2. Two ways of planing end grain to avoid breaking and splintering the ends. 3. Grain along edge shows planing direction. 4. Grain on facing surface.

Paul Williams

Simple joints

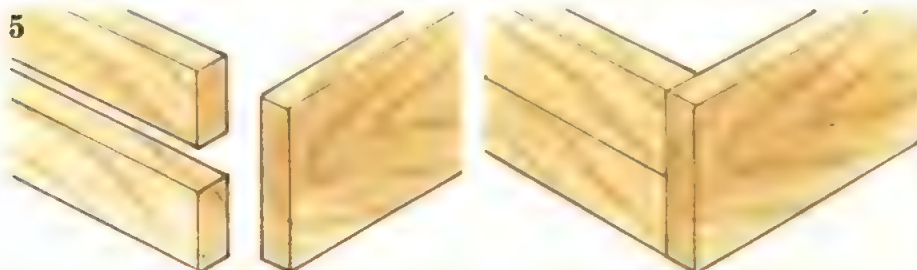
Hardwood joints

You might not need to, or want to, cut wood for joints, but it is good to know the basic ones so you will have some

idea of how they are used to make up the furniture that we use every day. You will also have some idea of what is involved should you want to repair a piece of furniture which has come undone at a joint and requires a bit of glue to secure it.

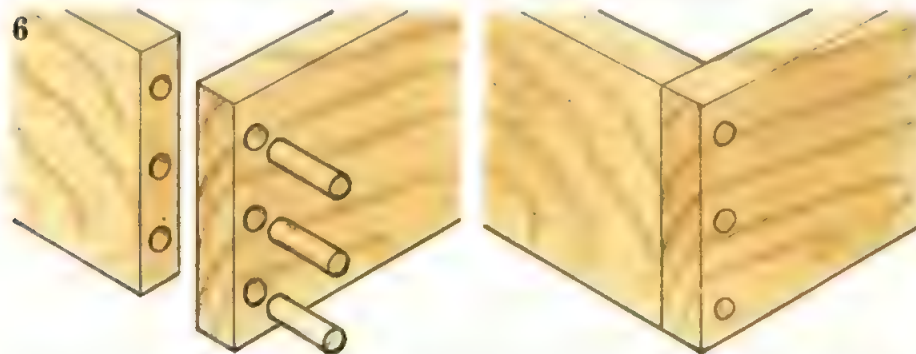
The butt joint (fig.5) is the simplest of all joints. It may be made straight, two pieces edge to edge, or at right-

angles, and needs nails, glue or screws to hold it together.



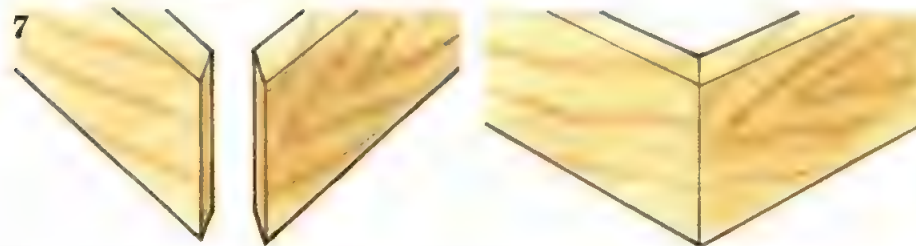
A dowelled joint (fig.6) is basically a butt joint reinforced with dowels. Both

halves of a joint are drilled at once to make the holes line up.



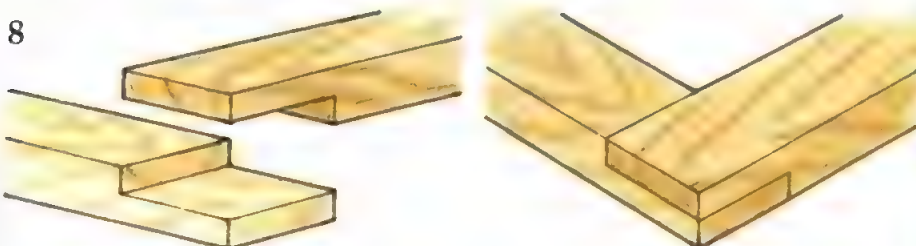
The mitred joint (fig.7) has a very neat appearance because no end grain is visible. It needs to be nailed or

glued. Unfortunately, it is a very weak joint unless it is reinforced in some way.



A halving joint (fig.8) is used at the corners of a rectangular frame. It is simple to make, has a reasonably

neat appearance and is quite strong if glued together.



A breadboard

If you find a beautifully grained piece of hardwood, remember that the simplest designs are usually the most effective. This way the grain, colour and texture of the wood can be fully enjoyed.

To get familiar with working with hardwood and using the tools, make this handsome board—it can double as a cheese board.

The board is about 25.5cm x 35.5cm (10"x14")—it depends on how much wood is removed by planing. You can of course use the same idea to make a smaller or larger board. Try to obtain hardwood with interesting grain

You will need:

Plane, marking gauge.

A piece of hardwood, or off-cuts, 19mm ($\frac{3}{4}$ " thick, from which to cut a piece 25.5cm (10") wide and 30.5cm (12") long, and two pieces 2.5cm (1") wide and 25.5cm (10") long—PBS. 4 pieces of 6mm ($\frac{1}{4}$ ") dowelling, 5cm (2") long

Hand drill with 6mm ($\frac{1}{4}$ ") bit. Tourniquet—old tights are ideal as they won't damage the wood.

Saw.

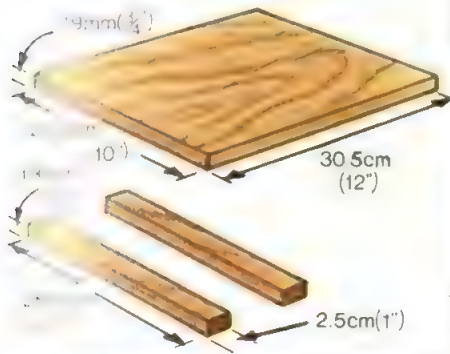
Fine grade glasspaper.

Wood glue.

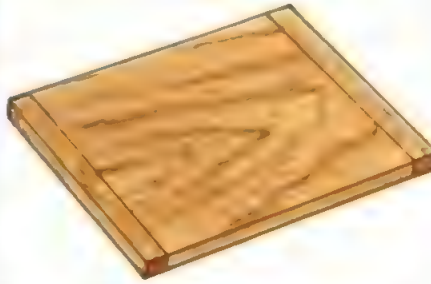
Wax or linseed oil.



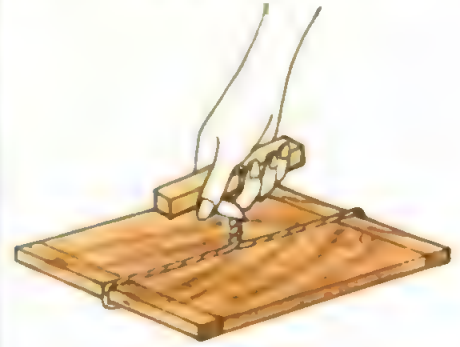
1. Measure and cut the hardwood to the sizes shown.



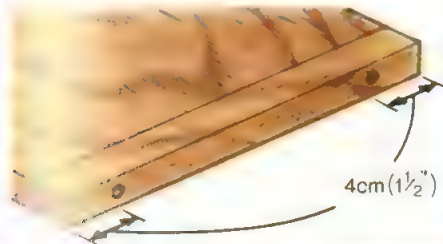
2. Assemble the pieces as shown and make sure that they fit snugly all round. Plane and smooth each piece of wood as necessary.



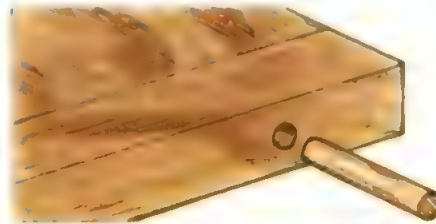
3. Glue and clamp the pieces together with a tourniquet made from tights.



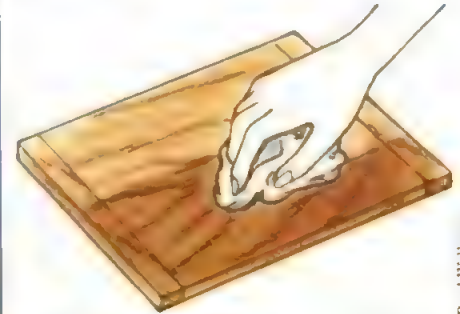
4. Drill all holes 4cm (1 1/2 inches) from the ends. The holes must be straight and go through into the larger piece for about 1.5cm (5/8 inch).



5. Insert pieces of dowel into the holes. They must go the length of the hole. Use a bit of wood glue if necessary. Trim and smooth the ends with fine grade glasspaper.



6. Wax or oil the board to finish.



Paul Williams



The strips at the end of the board are joined with bits of dowelling rod.

Jerry Tubby

Plasticizing materials

Plastics 12



Whatever your craft—needlework, textile printing, upholstery or working with wood, paper or metal—there will be times when the surfaces must be protected from knocks, dirt and damp conditions. A variety of varnishes, including polyurethane varnishes, are available and these are very durable and attractive. They are not suitable, however, for non-rigid materials and this may include fabrics and paper.

So what do you do when you wish to protect a tablecloth against spills, or a delicate paper lampshade against grime or a tapestry against the inevitable wear and tear of the years? One way is to use an aerosol spray to give a plastic finish to the material.

Types of finish. There are several waterproof plastic finishes on the market. A few, such as those manufactured by Dylon or Scotchgard, give protection against wet and stains without apparently changing the look or feel of the fabric.

Another type of finish stiffens up the material and gives a permanent seal. This stiffening can be very useful if you are making blinds, for example, where the fabric would otherwise be too floppy.

All types of finish are available in aerosol form and are extremely easy to apply and to handle. The sprays give a clear, colourless finish and, in addition,

a polyvinyl variety is also sold in black and in white.

To use the sprays

At all times be sure to follow the manufacturer's instructions when using the various sprays, especially if these

Safety

Although these plastic finishes are harmless if used with care, you should observe several safety precautions.

Be careful to work in a well ventilated area as the solvents used in the spray can be harmful.

Keep away from a naked flame or direct heat.

Do not puncture or burn the can after use.

Store at room temperature.

Keep away from children.

Aerosol sprays can be used on most fabrics and a polyvinyl coating can be used for paper. Some fabrics, however, may swell and distort when sprayed so always be sure to test on a scrap piece beforehand. Leather and plastics are particularly vulnerable. If distortion does occur it will happen soon after spraying so you will not need to wait long before knowing the outcome.

instructions differ from those given. ☐ Open the windows to ventilate the room.

The fabric which you wish to spray should be new or clean and free from any traces of detergent.

☐ Test on a scrap piece of fabric first. Test for colour fastness by spraying and then rubbing with a white, absorbent cloth. If the colour comes away then do not spray. But if the spray adheres satisfactorily you can start to spray on the main piece of fabric.

☐ Lay the fabric on a flat, clean surface protected by a piece of newspaper. Hold the canister about 20-30cm (8"-12") away and firmly depress the valve.

☐ Spray from side to side across the fabric until it is completely wet. Overlap the sprayed areas for protection.

☐ When the fabric is completely dry test for waterproofing by splashing a little water on the surface. If the water soaks in wait until dry and apply a second coat. If droplets form then one coat is sufficient although you may apply further coats if you wish. Leave the fabric for about half an hour to dry completely.

This plastic finish is hard-wearing given reasonable care. Just wipe the surface clean with a damp rag. If the fabric seems to be losing its coating after a while it is a simple matter to re-spray. Some coatings may yellow slightly after use so bear this in mind.

To make a blind

Spray the fabric with a plastic coating to stiffen it. Then fit the sprayed fabric to a roller blind kit, following the manufacturer's instructions. There are several sizes of kit available so you should be able to find one to suit the size of your window.

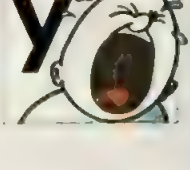
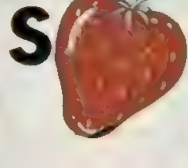
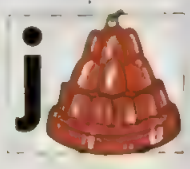
A plasticized blind in fabric designed by The Picture Blind Co.



Spray thoroughly on both sides for a good finish.



Whoops! But plasticized table cloths wipe clean easily.



Mosaics from grocery seeds

Seedwork I



Many people tend to think rather vaguely of seeds as small round things which you push into the soil in the spring, but closer observation will show the remarkable diversity that makes them an ideal material for collage.

If you have never considered them before, look into your store cupboard and examine the rice, beans, peas, lentils, and so on, among your staple foods. In even the most meagre collection you will see a surprising variety of form. Handle them and you will begin to appreciate their potential: the glossy jackets of haricot and red beans, the cool translucency of pudding rice and the sequin shape of split peas and lentils, go to make seed mosaic as satisfying to the finger tips as to the eyes.

Another advantage is that, unlike other types of mosaic where the units are basically the same, with seeds you can choose the size and shape to suit your needs and mix different seeds to get the effect you want.

Grocery seeds

Naturally the seeds most readily available are those of the grocery type, in other words those which may be purchased by the gram or the pound from stores and supermarkets.

Rice. Most inexpensive and useful are the various kinds of rice: short fat pudding, long grain and brown rice. Being of a linear shape they are easy to handle and make fine lines for descriptive work. Rice can be polished or unpolished. Two additional advantages of the polished types of rice are their absorbency and translucency.

Peas and beans. Perhaps the widest variety you will find will be in the pea and bean families. Whole green peas, split green or yellow peas and, less commonly, chick peas. Chick peas have an amusing knobbly shape like a little trussed chicken and their colour contrasts pleasantly with the green peas. (Beware relying too strongly on the colour of split green peas as this is due to a dye, the original green outer skin having been removed.)

Beans offer even more scope. You will surely find white haricot, butter and soya beans which, though coloured similarly, vary in size and shape. A

favourite bean is the glossy red one much used for chilli con carne. A packet will contain assorted sizes ranging from 1cm (3/8") to 2.5cm (1") and the wonderful deep crimson colour shows up excellently in a picture.

Delicatessens and specialist food shops offer a greater choice because these shops generally stock oriental and continental foods including, of course, the types of peas and beans which are peculiar to those parts of the world. The tiny green beans called moong or mung and the aptly named black-eyed



Seeds are usually placed with tweezers.

beans are attractive. You may also find gunger peas which are mostly a creamy mushroom colour with russet speckles, although some are completely russet.

Lentils and barley can be found in many areas and the more comprehensive shops may have large red, green or even white blanched lentils.

Spices. Seeds of the spice variety, such as peppercorns, poppy, cardamom, dill and sesame are sold by the ounce and work out rather expensive. They are not really worth buying with the exception of poppy seeds or maw, which is a beautiful natural blue. (Maw is best bought from a bird seed merchant).

Nuts. Do not ignore the greengrocer where you may find the whole range of nuts: hazel, brazil, almond and, of course, walnuts. These are seeds too and what they may lack in colour content they more than make up for in their shape and texture.

Materials

Apart from seeds, which are of course the most important element of this craft, the only materials you will require are a baseboard, glue and varnish to finish.

The baseboard should be rigid enough to support the weight of the seeds and can be whatever shape or colour you require. Fairly stiff mounting card is suitable for smaller collages but if you intend to tackle anything larger than 30cm (12") square you would be better off with hardboard, plywood, chipboard or some such material. Many hardware or D.I.Y. shops will sell you an off-cut of one of these quite cheaply. The baseboard may be left in its original colour or it can be painted to harmonize or contrast with the seeds. If you choose to use stiff card then you can purchase it in a variety of colours.

Glue. It is essential that you employ a suitable glue to stick down your seeds. Use the 'instant' type, ie those which will set within one or two minutes, and preferably choose one which will dry transparent. Copydex is a useful all-purpose and easy to spread adhesive.

Varnish. Seed pictures benefit immensely from a light coating of varnish which not only heightens their glossiness but also strengthens the bonding of the seeds to the baseboard. Use a clear polyurethane gloss varnish and apply it with a brush. Varnish may also be purchased in a spray can which is less trouble though less economical.

Tools

You will need very little in the way of tools: a pair of tweezers, a plastic cocktail stick or similar strip of plastic, several paper tissues and perhaps a craft knife for splitting any seeds which are too large and a brush for varnishing.

Tweezers are a must for seed work, both for positioning seeds and for removing badly placed ones, stray hairs, fluff or scraps of dried glue. Your fingers are just not sensitive enough.

The plastic stick or strip will be used for spreading the glue and generally poking the seeds around.

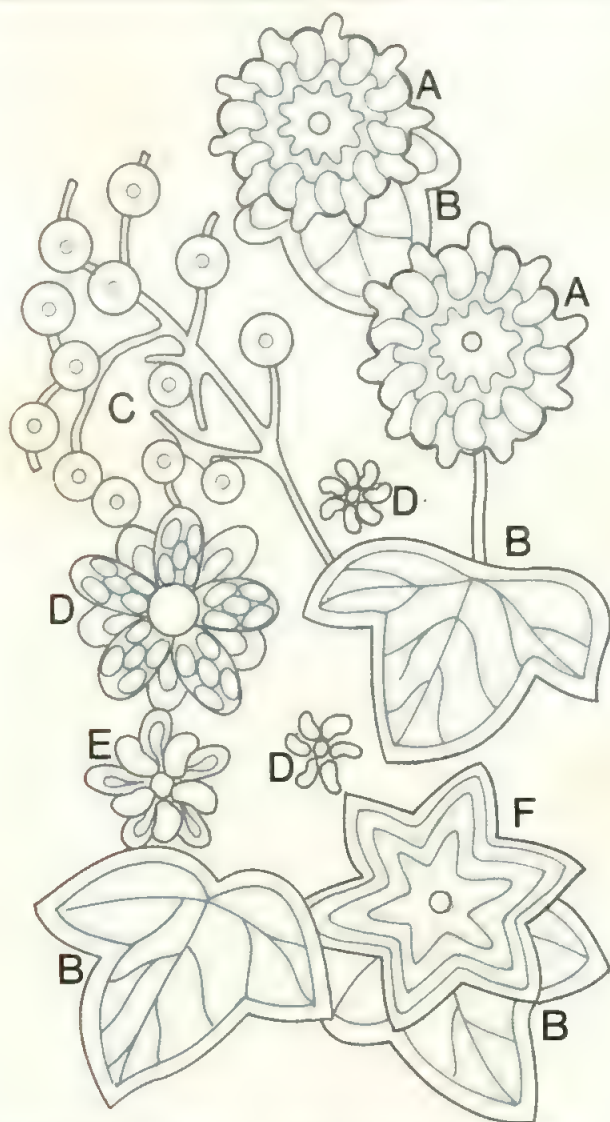
Use the tissues to keep the tweezers clean and free from glue and also to regularly remove any build up of glue from your spreader.

The warm rich colours and diverse textures of seeds make them an excellent mosaic material. A, dried green beans. B, lupini. C, green lentils. D, haricots. E, yellow split peas. F, chick peas. G, butter beans. H, borlotti. I, kalay. J, red lentils. K, black beans. L, sugar beans. M, yellow split peas. N, Moong. O, azuki. P, blanched lentils. Q, dutch brown beans. R, soya beans. S, black-eyed beans. T, split kalay. U, red kidney beans. V, brown lentils.



A	B	C	D	E	F
	H	J K		L	
G	I				
M	N	O	P	Q	R
		S	U	V	
		T			





Laying seeds

Different sizes of seed require varying techniques of laying.

Very tiny seeds such as poppy seed are best scattered with finger and thumb and then pressed gently on to the glue using a cocktail stick or the handle of a spoon. Any gaps can be filled in at once by scattering more seeds on top before the glue sets. Excess seeds can be gently blown away.

Large seeds can be handled with tweezers and, rather than laying down glue on the board for these, touch them on to the glue brush or tube to pick up the necessary amount before laying. **Small to medium seeds** such as lentils and rice can be conveniently placed by touching them with slightly sticky tweezers and then placing them on the glued board.

Flower picture

The flower picture is based on stylized daisy shapes and all the seeds used in it may be purchased in grocery shops or delicatessens. As the shapes are so

1. Design outline and seed placement chart for seed mosaic opposite.

basic you could replace some of the seeds with different ones according to what you are able to obtain. For instance you could use green split peas instead of moong beans. The main idea is to use an interesting variety of colours and shapes.

You will need:

Baseboard 32cm x 49cm (12½"x19"), either rigid card or hardboard.
Emulsion paint in a neutral colour if hardboard surface needs painting.
Tracing and graph paper the size of your baseboard.
Tweezers.
Soft pencil.
Transparent-drying glue, such as Copydex.
Polyurethane varnish, brush.

Seeds:

50gm (1½oz) each of butterbeans, black-eyed beans, maize or popping corn.
90gm (3oz) whole green peas and moong beans or split peas.

30gm (1oz) each of red beans and haricot beans.

15gm (½oz) green split peas, small red lentils, long grain rice, yellow split peas and soya beans.

20 roasted coffee beans.

10 green coffee beans.

Weights given are approximate as you will need to sort out the best seeds.

Transfer the design. Before beginning if you use hardboard you may want to give it two coats of emulsion paint. Cut out graph paper to the size of the baseboard, enlarge pattern (fig.1) to fill this, and transfer the design. Carefully trace the design on to your baseboard, marking it lightly. This is important as the background is not filled in with seeds so mistakes will show.

Laying seeds. It is nearly always a good idea to work from the top to the bottom of the baseboard and to complete each section of the picture before moving on to the next. This prevents you leaning on the work already carried out and loosening the seeds.

With a cocktail stick or a strip of plastic, begin by spreading a small area of glue, about 2.5cm (1") square is enough, on the baseboard. Spreading a larger area will not speed up the process as the glue dries quite quickly and seed laying takes time.

Do not lay down the glue too thickly, particularly when you are using smaller seeds; it may squash up and cover them which will spoil their appearance and waste glue. Aim for a thin, even layer of glue which will just hold the seeds; the varnish will make them more secure later.

Follow the lettered guide (fig.1) to seed placement. The two light coloured daisies (A) are composed of a roasted coffee bean, red lentils, popping corn, butter beans, black-eyed beans, working from the centre.

All the leaves (B) have an outline of whole green peas and are filled in with green moong with long grain rice to pick out the veins.

Green moong is also used for the stalk (C) of the spray while the flowers have a soya bean at the centre surrounded by popping corn.

The dark daisy shapes (D) are composed of soya beans and red beans, the largest having extra petals of green coffee beans and green split peas.

Flower shape (E) uses butter beans together with popping corn and split red lentils, while the base flower (F) begins at the centre with a haricot bean followed by red beans, black-eyed beans, haricot beans, yellow peas.

To finish: apply polyurethane varnish when mosaic is dry, painting it carefully on the design with an artist's brush unless you wish to varnish the baseboard as well.

Seed mosaic, made from grocery seeds and based on stylized daisy shapes, designed by Glenda Marsh.



Balance in a design

Design
know-how 35



It is easier to understand the abstract notion of balance in design by going back to its original meaning. In the Oxford Dictionary it says 'Balance—an apparatus for weighing, a beam poised so as to move freely on a central pivot, with a scale pan at either end . . . a weight which produces equilibrium, a counterpoise.'

When scales are not in use, the pans rest on the base; press a lever and they are raised up. When, for example, five apples in one pan are the same weight as the brass weight in the other pan, the scales are in a state of equilibrium. Take one apple away and the pan starts to teeter uneasily; take away another and the pan with the weight crashes down (fig.1).

This is what balance in design is about: how to distribute the weight of mass, colour or pattern satisfactorily so that the 'scales' balance.

Symmetry. Of course, symmetrical design is balanced but it's a bit dull, rather like the weighing machine before the lever is pressed. There is no sense of counterpoise or excitement. Look at a square for example: it is foursquare, absolutely static. So is this triangle or this symmetrical peacock (fig.2).

Imbalance. On the other hand the Leaning Tower of Pisa, or the shapes in fig.3, are like the scales where one apple is removed: there's a teetering, incomplete quality about them that causes an immediate sense of unease.

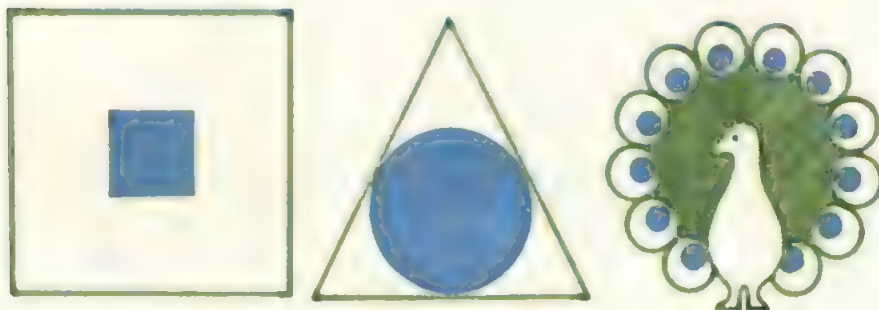
Equal weights. Note that the apples and the weight are not identical in shape or size even though they add up to the same weight. In the same way a group of smaller shapes can balance a larger shape. An area of blue can balance an area of green with the same tonal value. The same design with a strident red and a soft blue will probably seem unbalanced as shown in fig.4.

Unequal weights. Now look at the scales again. If you move the beam supporting the pans along, so that the heavy weight is nearer the central pivot and the three apples are further away, you can make them balance again in an asymmetrical way (fig. 5). In the same way if you have a cushion embroidered with a cluster of green leaves, you need to move out the 'weight' of a couple of brilliant, beaded butterflies until they balance. Sometimes you may want to add echo, a 'counter-balance' of brilliance with a speck of the same brilliant colour amongst the leaves. The pivot of a design does not necessarily have to be in the centre of the design. You will also see how space around a design is an integral part of the balance. Symmetry and asymmetry are discussed in the next chapters.

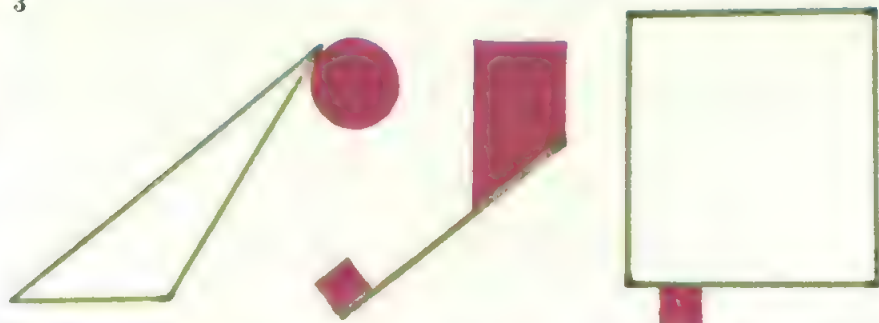
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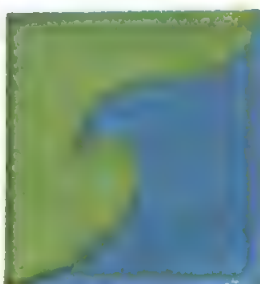
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3



4



5



1. In balance each side of the design is of equal weight. 2. Stable symmetrical designs. 3. Thoroughly unbalanced. 4. Colour contributes to balance. 5. Asymmetrical balance.



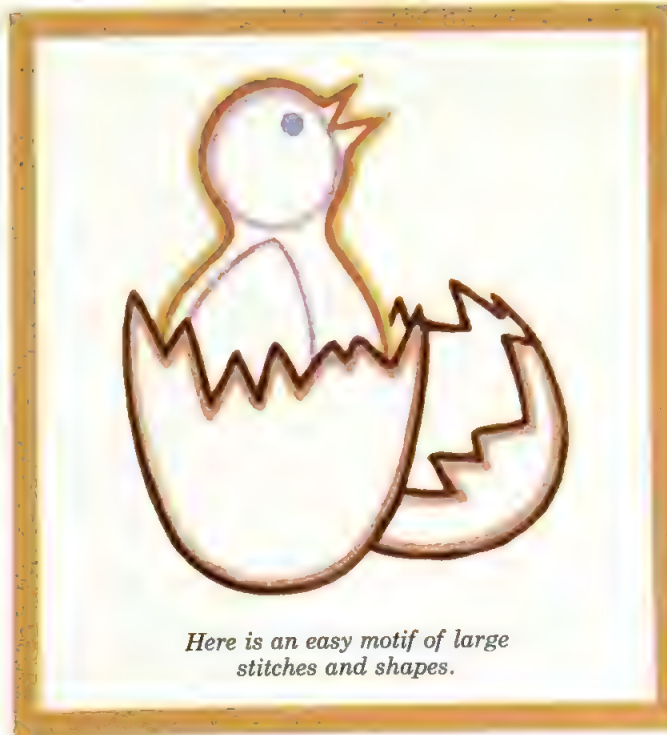
Creative ideas 35

Worked in tapestry wool, or knitting wool of similar thickness, and simple chain stitch, this rooster may not be able to tell if it is dawn, but he'll certainly keep you informed of the date.

You will need:

Tapestry wool (or knitting wool) in various colours. Graph and tracing paper. No.18 chenille needle. Plywood of desired size. Hessian about 5cm (2") larger all round than the plywood. Staple gun or string, calendar with cardboard back, Copydex.

The calendar shown is 30.5cm x 46cm (12"x18"), but you can make one any size you wish.



Here is an easy motif of large stitches and shapes.

Make a cover for an address book worked with this motif.

Trace the outline from the photograph on this page and enlarge to desired size on graph paper (see Design Know-how chapter 4, page 112).

Cut hessian large enough to accommodate the motif and allow for a generous turning to the back of the plywood when mounting the finished embroidery.

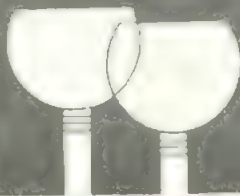
Transfer design to hessian. Oversew the edges of the hessian to prevent fraying and then embroider the rooster in chain stitch.

When completed, stretch the work over the plywood, secure with staples or by lacing back and forth from side to side with string.

Glue the calendar's cardboard back to the hessian with Copydex.

Mirror and leaded glass

Glass 9



A mirror combined with coloured glass can look very attractive. The glass can be either Antique or a textured or tinted commercial glass leaded together with the mirror in the usual way.

Commercial glass

Commercial glass is made in a great variety of textures and finishes, including sandblasted, frosted and satin finishes. There are also various types of



textured patterned glass which can be included in your craft work. Some commercial textured glass is coloured or you can colour your own using glass paints as described in Glass chapter 3, page 370. Alternatively, you can paint the back of the textured glass with silver paint after it has been leaded, to provide a silvered effect.

In this chapter a mirror is surrounded by four rectangles of Opalescent glass and four squares of textured commercial glass; or you can choose any colours and types of glass.

To make a mirror

This mirror is simple to make and you can use any glass which is at hand. Once you have leaded up one mirror and coloured glass project you can try a variety of other designs.

You will need:

Tools

See Glass chapter 7, page 798.

Materials

A mirror, 17.5cm x 11.5cm (7"x4½"). Buy a mirror the exact size or ask the glass merchant to cut it for you.

Opalescent glass, 30cm x 30cm (1'x1'). Opalescent glass is comparatively expensive and difficult to cut and you may prefer to use commercial glass.

Antique or commercial glass, four squares 5cm x 5cm (2"x2") each. The glass used in this mirror is a variety of textured commercial glass. Any oddments of glass will do so long as they look attractive together.

Lead calme, double-channelled, either round or flat type, about 6mm (¼") wide and 2m (7') long.

Tinman's solder; a 30cm (12") stick is more than sufficient.

Flux or tallow candle.

Wire wool or wire brush.

Lasting nails or panel pins.

Lampblack or grate black (optional).

Putty (optional).

Felt or thick cloth for padding the glass.

Medium grade glasspaper.

Hardboard or smooth piece of wood at least 30cm x 25cm (12"x10").

Thin white card about 30cm x 25cm (12"x10").

Wire, about 0.8mm (gauge 20-21) thick, or strong jewelry chain for hanging the mirror (optional).

Pencil, ruler, scissors, felt-tipped pen.

□ Place white card on flat surface.

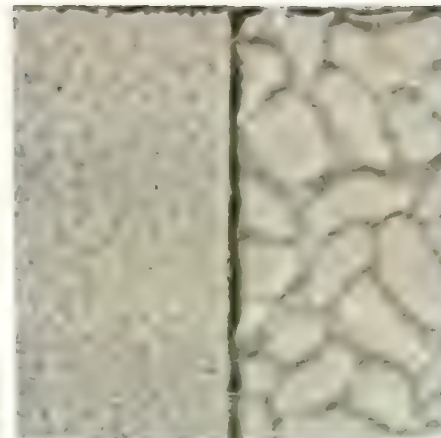
□ Using the ruler and pencil draw a set of templates for the mirror. You will need these sizes:

Two pieces 17.5cm x 5cm (7"x2").

Two pieces 11.5cm x 5cm (4½"x2").

Four pieces 5cm x 5cm (2"x2").

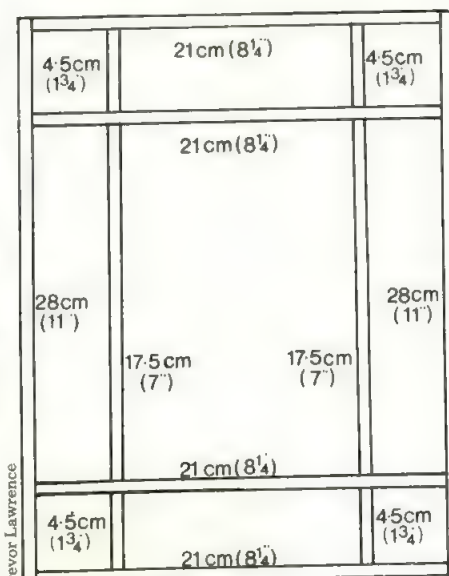
Once you have made a simple mirror try your hand at something more complicated; the materials, tools and techniques are still the same.



Textured glass. These examples show the variety of available finishes.



This finished mirror is an easy project using mirror and glass together with lead. Designed by Pixie Dorchy.



1. Fit the glass and lead by following the pattern in this diagram.

□ Cut out the templates.

Cutting. Lay the felt on a flat surface and put the Opalescent glass on top.

□ Arrange the four rectangular templates on the glass, leaving a space between each template.

□ Draw round the templates with the felt-tipped pen. Remove the templates. If you feel at all unsure about your glass cutting ability you may prefer to draw one template at a time and cut that section of glass before moving on to the next.

□ Using the ruler score along the lines with the glass cutter drawing it firmly and evenly towards you.

□ When all the lines have been scored turn the glass over and, with the other end of the cutter, tap along the score lines until they crack open. Follow the instructions in Glass chapter 4, page 450, for cutting glass.

□ Wrap up any remaining glass for another occasion. Sweep up any splinters and fragments and wrap in newspaper before discarding.

□ The four corner pieces are cut from a variety of commercial glass.

Leading. Untwist the lead, stretch and straighten it using the method described in Glass chapter 7, page 798.

□ Place the lead on a flat surface and separate the leaves with an oyster knife or other strong, blunt knife.

□ With a lead cutting knife cut the lead calme into these lengths:

Two lengths 17.5cm (7").

Four lengths 21cm (8¼").

Two lengths 28cm (11").

Four lengths 4.5cm (1¾").

□ Lay the calme flat on the hardboard and slot in the mirror, Opalescent glass and commercial glass as in fig.1.

□ Trim the lead if necessary so that the glass fits snugly into the leaves. Use the lathekin to smooth down the edges of the lead.

□ Lightly roughen and clean ends of the lead with the wire wool or wire brush.

□ Carefully hammer in nails around the leaded glass to hold it in place.

Soldering. Follow the method described in Glass chapter 7, page 798. Solder both sides of the mirror.

Putty. Since the glass pieces will probably be of slightly different thicknesses and will rattle within the lead leaves, it is as well to squeeze putty between glass and lead. Mix up a little lampblack with the putty and push it underneath the lead on both sides of the glass. Trim the putty close to the lead with a sharp knife.

To finish the mirror rub down the lead and the joints with glasspaper and polish with lampblack.

Thread a wire or chain round the outer groove in the lead and hang at eye level. Alternatively, prop mirror on a flat surface such as a dressing table.

Modelled forms with coils

Clay 23



1. For a simple rounded animal shape, build coils outwards from a pointed 'nose'.



2. Continue expanding the coiled shape to give a curved 'back', then contract it to give the animal a blunt rear end.



3. The basic shape is built up by expanding and contracting the coils, and the snout and 'prickles' complete the animal.

Symmetrical bowls, jars and cooking utensils are not the only shapes that can be built up from coils—the coiling method can just as easily be used as the basis of modelled forms.

As a coiled shape always has a hollow centre, pieces made in this way can be fired without the risk of explosion that is always present with solid forms, and without needing to be hollowed out.

The coiling method is also perfect for making larger shapes that could not be fired solid or hollowed out satisfactorily without damaging the form. The large animal and human head models shown in this chapter fall into this group.

The coils are built up in exactly the same way as described in the previous chapter, but they can be placed on top of each other in such a way as to make any basic shape that you require. Expand or contract the form as you wish, but always make sure that the coils are pressed closely together so that no air is trapped between them. Use the coiling method best adapted to the size and shape you have in mind—tiny coils make excellent fine detailing such as tails and skin corrugations, larger coils can be used to quickly build up large smooth areas. Remember that, as with all modelling, it is a good idea to make a sketch of the piece you have in mind, so that you have some idea of the required dimensions and proportions to refer to as you are working.

Coiled animal forms

Hedgehog. Begin by making a hedgehog. Build up the coils horizontally from a pointed nose (fig.1). Continue building up the body in the same way to the widest point which is about 15cm (6") in diameter, then taper it off to give a blunt rear end (fig.2), smoothing the coils with a serrated kidney as you go. Place a hole inconspicuously at



4. The simpler cat is basically a pyramid of small coils, and the larger one has been built up on a coiled oval base shape.

Right. The animal shape finally developed can be quite complex, perhaps like this chunky rhinoceros designed by Tom Tudor-Pole. Legs, head and tusks are added to the basic body structure which is itself pinched and modelled into shape.

Far right. In contrast, the whole shape can be kept very simple and streamlined. The sheep shown here has a smooth, rounded body with legs that are suggested rather than realistically modelled. Sheep by Rosemary Wren.

some point on the body so air can escape during firing.

Finish off the animal by combing over it with a serrated kidney to give the effect of prickles, and try glazing it in opaque brown and cream glaze like the finished example in fig.3.

Two cat shapes. The cats shown here are both constructed in basically the same way.

The smaller version is made very simply by coiling upwards in a rounded cone shape, with a constriction to form the neck and pricked-up ears pinched at the top of the head. The base of the cone is about 10cm (4") in diameter, and the cat is about 12.5cm (5") high. Eyes and whiskers are scratched in with a pin.

The larger cat is built up on a base coil that is pushed into the required 'crouching' shape, and the coils are then carefully built up with the anatomy and posture of the cat in mind. The base coil is a rough oval 37cm (15") in circumference, and the finished piece should be about 20cm (8") high. Shape the forelegs and pinch the back to give the characteristic look of the spine, then add a fat coil for the curled tail (fig.4).

Leave the body to dry out a little, then build up the head using small coils. Ears and small balls of clay pressed into the eye sockets complete the cat (fig.5).



5. Small coils are used to complete the head; ears and features are modelled next and a thick coil forms a tail.



Many animal shapes can be developed by coiling. A rounded bird (by Rosemary Wren) contrasts with a conical rabbit (by Jonathan Whalley of Haverfordwest Pottery). An owl (by Aston Pottery) is made from three simple shapes.



Armadillo designed by Shirley Brown with a textured finish and modelled tail, limbs and head added to the main body. Paler glaze is used for highlighting.

Armadillo. The armadillo is naturalistic in shape, but the texture and glazing merely suggest the rough, horny nature of the outer carapace.

Start with a coiled circle about 2.5cm (1") in diameter. Build it outwards, as for the hedgehog, until it is about 7.5cm (3") high and 7.5cm (3") in diameter. Smooth the coils together, leaving them exposed in the centre to form the arch of the back.

Leave the body to dry out, then lay it down horizontally and tape one side against the work surface to flatten the stomach area. Bend the whole piece slightly to give the body an arched shape, and pinch together the nose and tail ends. Form the head shape in your fingers, incising the eyes with a small tool and modelling the ears from small pieces of clay pressed close to the skull. Roll out a 5cm (2") coil of clay and attach it to the rump end by scoring both pieces and coating them with slip. Roll another coil, cut it into 2.5cm (1") lengths and model the legs and toes. Attach them to the body in the same way.

Leave the piece to stiffen again, then pierce a small hole in the underside so that the air can escape during the firing.

Give the skin its tough, bumpy look by impressing the clay surface with the top of a ballpoint pen. You could also try dampening the clay and gently pressing a sprinkling of builder's sand into it.

Choose a dark brown glaze, with perhaps another lighter shade to highlight small areas of the body. The armadillo shown here has pale lilac streaks on flanks, nose and forehead.

Human head

If you are interested in modelling heads, the coiling method is an excellent way to build up the basic neck and skull shape.

It gives an absolutely blank form on which to work, and to which you can add shaping and features as simplified or as realistic as you like.

Visit your local museum or art gallery and take note of how other heads are made and how particular effects are achieved. Some, particularly primitive examples, are very simple indeed, almost without features at all. It is the shape of the head itself that is most important.

The basic shape. For the first head that you make, it is easier to concentrate on making the shape of the skull look right without worrying too much about features or expression.

Build the neck shape in the usual way using smaller circular coils about 12mm (½") in diameter.

Leave the clay to dry out before expanding the head above it.

Use flattened coils (about 5cm (2") wide) to build up the larger areas of skull and face.

Place the next coil to the outside of the one below on one side, to begin the jaw and chin shape (fig.6), and inside the coil below on the other to begin the back of the head.

Reverse this process when the chin has been formed and also when the shape

needs to be expanded for the bulge of the skull (fig.7). Keep your effect in mind as you work, remembering the anatomy of the skull.

The easiest way to become familiar with all the planes of the head and face is to make a really close examination of a friend's head. It is also helpful to feel your own bone structure by gently smoothing over your face with two fingers of both hands, to note where the bones are.

Continue building to the top of the forehead then work over the face with your fingers, supporting the shape from the inside with the other hand, to form eye sockets, nose, mouth and ears (fig.8).

Then close the top of the head by making successive coils much shorter, sealing them together securely and pulling the shape towards a central point at the top of the head. Cover the small hole left at the top with a small circle of clay the same thickness as the coil (fig.9).

A more realistic head. If you want a more realistic portrait head, build up the features on the basic coiled shape—the modelling process always involves adding clay, not scraping it away. Use small amounts of soft, malleable clay to form the features. Make a close study of your subject, and build up a replica of what you see (fig.10).

Hair can be modelled most effectively by pressing small balls of clay to the surface of the head with your thumb (fig.11). Use slip to ensure that they are firmly fixed in place. These knobs of clay can be left as they are to give a curly effect, or 'combed' out with a serrated kidney.

Biscuit firing. The head must be left to dry out very thoroughly before it is biscuit fired. This can take up to two weeks, depending upon the warmth of the place in which it is left. It is best to let the head dry out in an unheated atmosphere where there is no risk of it cracking, but if this is not possible keep it well away from any source of artificial heat.

Glazing. Modelled heads often look most effective left unglazed, particularly if you have used a red earthenware clay. Pieces like this are purely decorative, so glaze is not a necessary addition.

However, you may want to experiment with glazing your forms, and grey or coppery colours can give an interesting metallic effect.

Right. Three different modelled heads built up from coils. The features can be merely suggested, or they can be developed to give a more realistic look. Notice that small knobs of clay pressed to the head look like curled hair. Bronze head designed by James Ellitson, others by Shirley Brown.



6. Begin coiling outwards for the jaw.



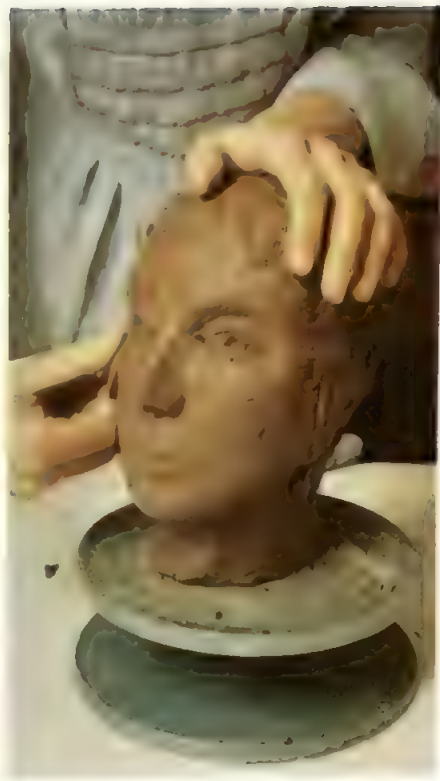
8. Develop features on the face area.



7. Expand the head in the opposite direction for the bulge of the skull.



9. Fill in the small hole at the top of the head with a knob of clay.



10. Complete features by adding clay modelled on to the basic face shape.



Patchwork effects

Yarn —
knitting 6



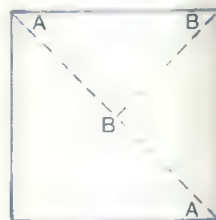
Be your own designer with patchwork knitting—it is one of the most original ways of creating anything from shawls, jerseys and skirts to cushions, mats or bedspreads.

From simple patchwork squares to more challenging ones which give the effect of random shapes, the combinations of stitches and colours are endless. You can have hours of fun and interest, as well as using up your scraps of yarn economically.

The shawl shown here is based on a number of individual squares worked in stocking stitch (See Knitting chapter 1, page 680) and three ends of yarn in various colours. These squares are joined together in such a way that a serrated effect is formed along two sides of the shawl. The gaps along the edge are then filled in with triangular shapes so that a final straight edge is made on to which the fringe is threaded. You can either follow the instructions for the shawl given below, or you can make your own using any yarn and size square that you want. All you will need to know is how to make a triangular shape for the edge of the shawl.

First you will need to complete a square in your chosen yarn. Measure this square diagonally across the centre from one point to another, marked A to A on the chart (fig.1), to

1. Use the marked points on this square to calculate the number of cast on stitches and rows required to shape a triangle.



give the width of the base of the triangle. Use the stitch tension obtained on the square to calculate the number of stitches to be cast on for the triangle base.

Measure from B to B on the chart for the depth measurement, and using the row tension you can work out the number of rows needed to shape each side of the triangle up to a centre point. Calculate how many stitches need to be decreased in the given number of rows and keep the shaping even by working two stitches together at each end of every row, every alternate row, or at regular intervals until all the stitches are worked off.

Patchwork shawl

For a shawl that measures 137cm (54") across the top and 68cm (27") from top to point when each square measures 7.5cm (3") square worked on No.7 needles with 3 strands of yarn.

Shawl made from square and triangular shapes in Pinguin Jericho cotton.

You will need:

Total of 400gm (14oz) of lightweight cotton yarn in 12 assorted colours or as required. You should choose a yarn which gives about 14 stitches to 7.5cm (3") when using three strands.

One pair No.7 (US 7) needles.

One No.4.50 ISR (US I) crochet hook.

To make a square, use 1 strand of yarn in each of 3 colours together and cast on stitches to give 7.5cm (3").

Work 7.5cm (3") in stocking stitch, then cast off.

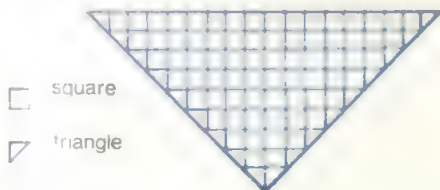
Make 71 more squares, using colours according to taste and availability.

For a triangle, using 1 strand of yarn in each of 3 colours together, cast on stitches to give 10.5cm (4 1/4").

Work triangles in stocking stitch; shape the sides by decreasing one stitch at each end of the next and every following alternate row until 2 stitches remain. Cast off.

Make 17 more triangles.

To make up. Press the squares and triangles using a cool iron over a dry cloth.



2. Join squares and triangles as shown.

□ Join the pieces in the order shown in the diagram (fig.2), alternating the direction of the knitting on alternate squares as shown in the picture.

□ Using the crochet hook and any 3 colours of yarn, work a row of double crochet around the outer edge of the shawl.

□ Cut yarn into 30cm (12") lengths for the fringe.

□ For each tassel take 2 strands of each of 3 colours and make a knotted fringe (see Crochet chapter 5, page 482) along both short sides of the shawl.

□ Trim the ends of the fringe to an equal length.

Random patchwork

A simple but effective way to make random patchwork is to work out a series of square patterns, then combine any number in any order you fancy.

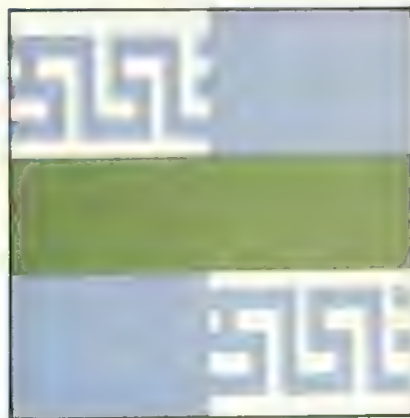
The exciting thing about this technique is the way in which the sequence of patches and colours is used. You will imprint your own individual personality on the work as no two knitters will work either the same patch or colour in identical order so that every sample of fabric will have a unique appearance.

Random patchwork patterns can be worked as separate squares and then

joined together, as already shown in Knitting chapter 1.

Otherwise, you can work an all-over fabric to the required size. This method means that you will be knitting small areas of stitches in different colours in the course of the same row. To do this, use a small, separate ball of yarn as it is needed instead of carrying the yarn across the back of the work until it is required again. Always twist the yarn you have just finished using around the yarn you are about to use on the wrong side of the work on every row, otherwise you will leave a gap between the colours.

In the following samples each colour has been coded alphabetically in the order in which it is used eg., A for the first colour, B for the second colour and so on. The five patches shown have been based on a combination of the eight colours used in the cot cover shown overleaf. However, you can of course knit each patch in any combination of colours you wish. A represents the first colour you use in each patch but it does not represent a consistent colour from patch to patch. For each patch you will need to cast on 28 stitches in Double Knitting yarn and the 36 rows in each pattern will form a square about 11cm (4 1/4") by 11cm (4 1/4").



First patch—a square based on a Greek key design and comprising three colours.

First patch

1st row. (RS) Using A, K14, using B, K14.

2nd row. Using B, P14, using A, K14.

3rd row. Using B, K6, slip 1 purlwise without working the stitch—called sl 1—, K5, sl 1, K1, K14.

4th row. Using B, P14, K1, yarn forward to the front of the work—called yfwd—, sl 1, yarn to the back of the work—called ybk—, K5, yfwd, sl 1, ybk, K6.

5th row. Using A, K1, sl 1, K3, sl 1, K1, sl 1, K3, sl 1, K2, using B, K14.

6th row. Using B, P14, using A, K2,

yfwd, sl 1, ybk, K3, yfwd, sl 1, ybk, K1, yfwd, sl 1, ybk, K3, yfwd, sl 1, ybk, K1, 7th row. Using B, K4, sl 1, K1, sl 1, K3, sl 1, K1, sl 1, K1, K14.

8th row. Using B, P14, K1, yfwd, sl 1, ybk, K1, yfwd, sl 1, ybk, K3, yfwd, sl 1, ybk, K1, yfwd, sl 1, ybk, K4.

9th row. Using A, K3, sl 1, K1, sl 1, K3, sl 1, K1, sl 1, K2, using B, K14.

10th row. Using B, P14, using A, K2, yfwd, sl 1, ybk, K1, yfwd, sl 1, ybk, K3, yfwd, sl 1, ybk, K1, yfwd, sl 1, ybk, K3.

11th row. Using B, K4, sl 1, K5, sl 1, K3, K14.

12th row. Using B, P14, K3, yfwd, sl 1, ybk, K5, yfwd, sl 1, ybk, K4.

Repeat 1st and 2nd rows once more.

15th row. Using C, K to end.

16th row. Using C, P to end.

Repeat last 2 rows 3 times more.

23rd row. Using B, K14, using A, K14.

24th row. Using A, K14, using B, P14.

25th row. Using B, K14, K6, sl 1, K5, sl 1, K1.

26th row. Using B, K1, yfwd, sl 1, ybk, K5, yfwd, sl 1, ybk, K6, P14.

27th row. Using B, K14, using A, K1, sl 1, K3, sl 1, K1, sl 1, K3, sl 1, K2.

28th row. Using A, K2, yfwd, sl 1, ybk, K3, yfwd, sl 1, ybk, K1, yfwd, sl 1, ybk, K3, yfwd, sl 1, ybk, K1, using B, P14.

29th row. Using B, K14, K4, sl 1, K1, sl 1, K3, sl 1, K1, sl 1, K1.

30th row. Using B, K1, yfwd, sl 1, ybk, K1, yfwd, sl 1, ybk, K3, yfwd, sl 1, ybk, K1, yfwd, sl 1, ybk, K4, P14.

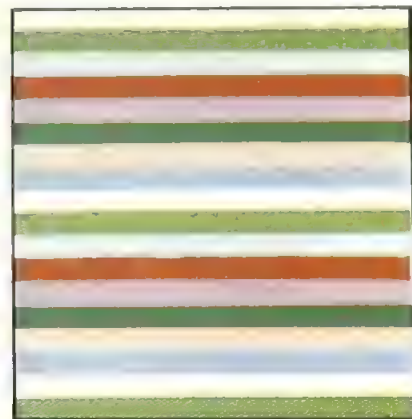
31st row. Using B, K14, using A, K3, sl 1, K1, sl 1, K3, sl 1, K1, sl 1, K2.

32nd row. Using A, K2, yfwd, sl 1, ybk, K1, yfwd, sl 1, ybk, K3, yfwd, sl 1, ybk, K1, sl 1, ybk, K3, using B, P14.

33rd row. Using B, K14, K4, sl 1, K5, sl 1, K3.

34th row. Using B, K3, yfwd, sl 1, ybk, K5, yfwd, sl 1, ybk, K4, P14.

Repeat 23rd and 24th rows once more—that makes 36 rows in all.



Second patch—striped in eight colours.

Second patch

1st row. (RS) Using A, K28.

2nd row. Using A, P28.

Repeat last 2 rows 17 times more, working in striped sequence of 2 rows each of A, B, C, D, E, F, G and H throughout—that makes 36 rows in all.



Third patch—four squares in one.

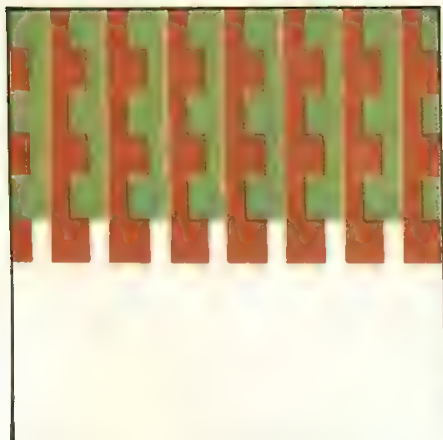
Third patch

1st row. (RS) Using A, K14, using B, K14.

2nd row. Using B, P14, using A, P14. Repeat these 2 rows 8 times more.

19th row. Using C, K14, using D, K14.

20th row. Using D, P14, using C, P14. Repeat last 2 rows 8 times more—that makes 36 rows in all.



Fourth patch—plain and fancy.

Fourth patch

1st row. (RS) Using A, K28.

2nd row. Using A, P28.

Repeat last 2 rows 5 times more.

13th row. Using B, K2, *sl 1, K3, repeat from * to last 2 sts, sl 1, K1.

14th row. Using B, K1, *yfwd, sl 1, P1, K2, repeat from * to last 3 sts, yfwd, sl 1, P1, K1.

Repeat last 2 rows once more.

17th row. Using C, K1, *sl 1, K3, repeat from * to last 3 sts, sl 1, K2.

18th row. Using C, K1, *P1, sl 1, ybk, K2, repeat from * to last 3 sts, P1, sl 1, ybk, K1.

Repeat last 2 rows once more. Repeat last 8 rows twice more—that makes 36 rows in all.

Fifth patch

1st row. (RS) Using A, K28.

2nd row. Using A, P28.

Repeat these 2 rows 5 times more.

13th row. Using B, K7, using C, K7, using D, K7, using E, K7.

14th row. Using E, P7, using D, P7, using C, P7, using B, P7.

Repeat last 2 rows 11 times more—that makes 36 rows in all.



Fifth patch—striped in two directions.

Cot cover

For a cover 61cm (24") wide by 81cm (32") long.

You will need:

Total of 450gm (16oz) of Double Knitting in 8 contrasting colours.

One pair No.8 (US 6) needles.

For the cover. Take a pair of No.8 needles and cast on a total of 140 stitches if you are working the full width to give 5 patches, or 28 stitches if you are making 5 separate strips.

□ Work in any pattern of patches and colours that you want until 7 complete rows of patterns have been worked—that makes a total of 252 rows in all. Cast off.



Patches worked in strips and joined.

For the fringe. Using No.8 needles and any colour, cast on 10 stitches.

□ The first row is on the right side of the work and is formed by knitting 2



Fringe formed by unravelling stitches.

stitches, bring the yarn forward to the front between the needles, then carry it over the right hand needle so that an extra stitch is made, knit the next two stitches together, then knit the final 6 stitches.

□ Purl 5 stitches at the beginning of the second row, knit 2 stitches, bring the yarn forward to the front between the needles, then knit the next two stitches together and knit the last stitch.

□ Repeat the last 2 rows until the strip fits along all 4 edges of the cot cover centre, easing it in slightly at the corners.

□ For the final row cast off 4 stitches and fasten off the 5th stitch, leaving 5 stitches on the left hand needle.

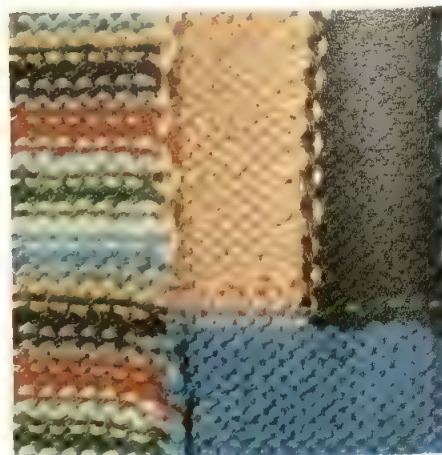
□ Drop these 5 stitches off the needle and unravel them all the way down to the first row to form fringed loops.

□ Join the cast on edge to the cast off edge by oversewing them together.

To make up. Darn in all the ends on the back of the cover.

□ Sew fringe in position all round the edges by backstitching it on top of the centre, about 0.5cm (¼") in from the edge.

Right: cot cover designed by Pam Dawson in Madame Pingouin yarn. Back (below) is as neat as the front.





Baby wardrobe

Cloth —
sewing II

Add a welcome touch of individuality to baby clothes by making them yourself from patterns that can be adapted to baby's own measurements and have the minimum number of seams. These patterns are for a short pinafore, a long pinafore, a smock and a pretty dress.

The secret of success with all the garments shown here is in the way they are trimmed or, in the case of the tuck-



Make a short pinafore for your baby and trim it with a contrasting bias binding.



This long pinafore is decorated with a ruffle cut from the same fabric.



A shorter version of the long pinafore, trimmed with broderie anglaise.



Make a baby wardrobe similar to the one shown on these pages from the patterns given here. Trim them with braid, binding or lace to add an individual touch.

ed dress, the clever placing of motifs printed using silk screen techniques. The patterns. Make these clothes for

Top: make sheets and a pillowcase for baby which match or tone with the rest of the wardrobe.

Bottom: the simple styling of this tucked dress makes it ideal for any fabric. The shape is especially suitable for decorated with a screen printed design.



Camden Press



Peter Heinz

a baby from the age of 6 months. For each of the garments it is necessary to take just one measurement and use this as a guide when enlarging the pattern (Design know-how chapter 4, page 112). For instance for the short pinafore you measure from the back of neck to 5cm (2") from the floor when the baby is sitting. Then enlarge the pattern (fig.1), so that the centre front line is this measurement.

Note: check the pattern measurements before cutting out fabric.

Seams. It is best to use French seams when making up clothes for small children and babies. This type of seam is more hard wearing than an ordinary one. Although usually recommended for straight seams only it is perfectly feasible to make French seams on very gradual curves like the ones on these garments.

Short pinafore

You will need:

Tracing paper and graph paper for making the pattern.

About 50cm (1yd) of 90cm (36") fabric.

Matching thread.

About 2.5m (2yd) of 1.3cm (1/2") bias binding.

□ Measure from back of neck to 5cm (2") from floor when baby is sitting.

□ Make the pattern following fig.1 using this measurement for *centre front* line (see above).

□ Pin pattern on to fabric, with the centre front line on the straight of grain.

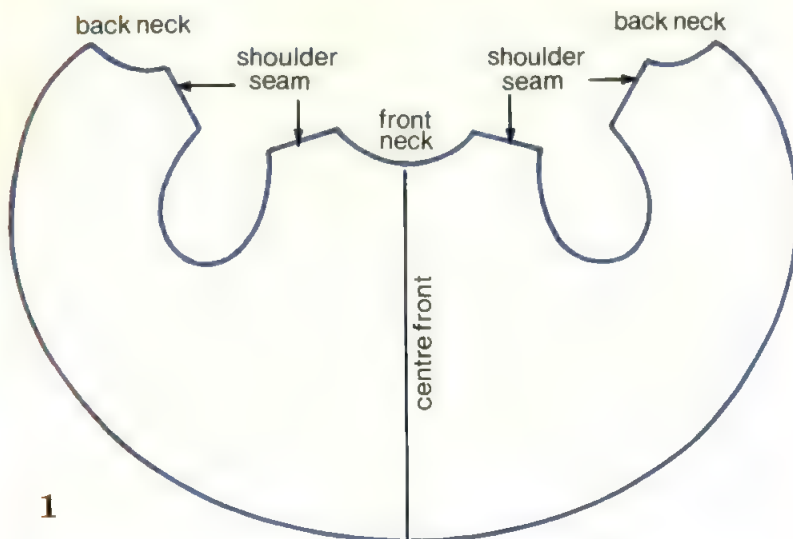
□ Cut out allowing 1.5cm (1/2") seam allowance on shoulder. There is no need to make a seam allowance on other edges as these are bound.

□ With right sides together, tack and stitch the shoulder seams.

□ Bind the armholes and hem edge with bias binding.

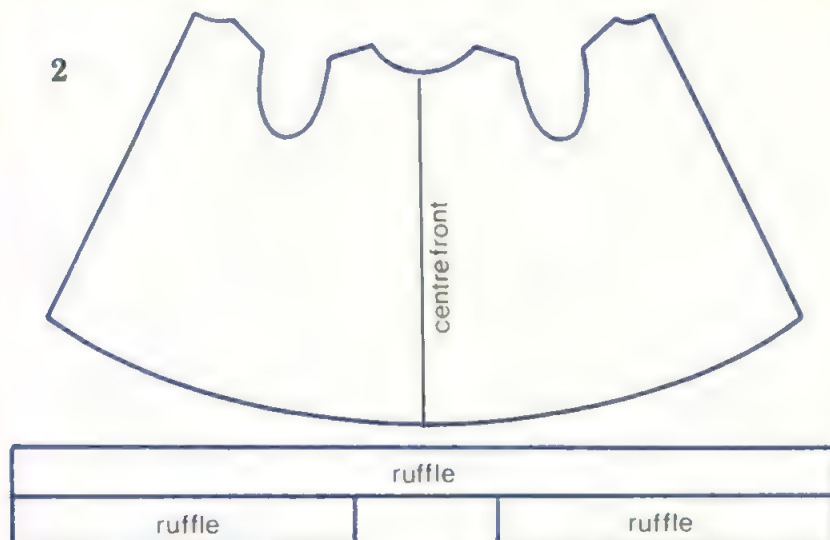
□ Bind the neck edge leaving about 20cm (8") of binding free at each end for ties.

□ Fold the ties in half lengthwise, with wrong sides together, turn in raw ends and topstitch close to the edges to finish.



1

2



Long pinafore

You will need:

Tracing paper and graph paper for making the pattern.

Approximately 50cm (½yd) of 90cm (36") fabric.

Approximately 1.2m (1¼yd) of 1.3cm (½") bias binding.

Matching thread.

□ Measure from centre back neck to bottom of knee.

□ Make the pattern following fig.2 using this measurement for the centre back and centre front lines (already described). Make a ruffle pattern in proportion.

□ Pin pattern on to single fabric, with centre front line on the straight of grain.

□ Cut out allowing 1.5cm (⅝") seam allowance on shoulders, bottom of pinafore and all round ruffle (this can be made as wide or narrow as you wish). There is no need to make a seam allowance on other edges as these are bound.

□ With right sides facing, tack and stitch shoulder seams.

□ Bind armholes.

□ Bind neck edge, leaving about 20cm (8") of binding free at each end for ties.

□ Fold ties in half lengthwise, with wrong sides together, turn in raw ends and topstitch close to the edges.

□ With right sides together tack and stitch the ruffle strips together with the long one in the centre, so that they make one long strip. Press seams open.

□ Turn under 6mm (¼"), then 9mm (⅜") on one long edge. Machine stitch turning in place.

□ Run a gathering thread along the long raw edge of the ruffle. Pull up gathers evenly to fit bottom of dress and, with right sides facing, tack and stitch. Neaten turnings together and press upwards.

□ Bind both sides of centre back opening and raw edges of ruffle in one operation.

Note: this pinafore can be cut shorter and trimmed with wide broderie anglaise if preferred.

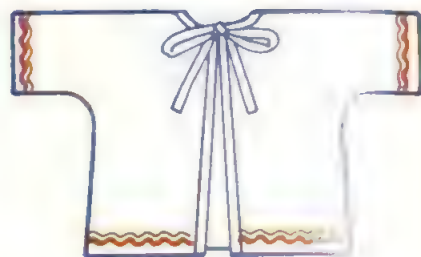
French seam

This seam is used on sheer fabrics, baby clothes and underwear. It is best worked on straight seams.

With wrong sides together tack on

the seam line, 1.5cm (⅝") from the edge. Stitch 6mm (¼") outside line of tacking (fig.a). Remove tacking and trim turning to just less than 6mm (¼"). Press turnings together to one side.

With right sides together tack and stitch on the seam line, enclosing the raw edges (fig.b). Press towards the back of garment.



Smock

You will need:

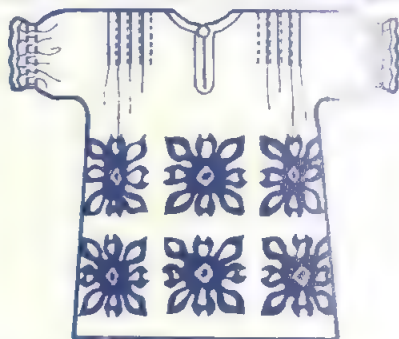
Tracing paper and graph paper for making the pattern.

About 80cm (¾yd) of 90cm (36") fabric. About 2.3m (2½yd) of 1.3cm (½") bias binding.

Lace, braid or other trimming as required.

□ Measure baby's chest and add 10cm (4") for ease of movement.

□ Make the pattern following fig.3.



The dress

If the dress is made for a child, approximately 92cm (36") tall, it can be cut from the full width of 90cm (36") wide fabric but it can be made up to fit any size—even an adult! If the pattern is too large to fit into the width of fabric chosen the sleeves can be cut separately and joined.

Check the pattern measurements before cutting out fabric.

Note: the fabric used for the dress shown here was silk screen printed after the dress had been cut out, but before sewing.

You will need:

Tracing and graph paper for making the pattern.

About 1m (1½yd) of 90cm (36") fabric for a 2 year old.

About 70cm (¾yd) of 1.3cm (½") bias binding.

Matching thread.

Shirring elastic.

1cm (⅜") button.

Measure from back of neck to just below the child's bottom. Using this

using half of this total measurement on the front and half on the back (as in fig. 3).

□ Pin pattern on to single fabric, with centre front and centre back lines on straight of grain.

□ Cut out allowing 1.5cm ($\frac{1}{2}$ ") seam allowance on underarm edges. There is no need to make a seam allowance on the other edges as they are bound.

Note: if you prefer a hem to a bound edge at the bottom and on the sleeves allow 5cm (2") on these edges.

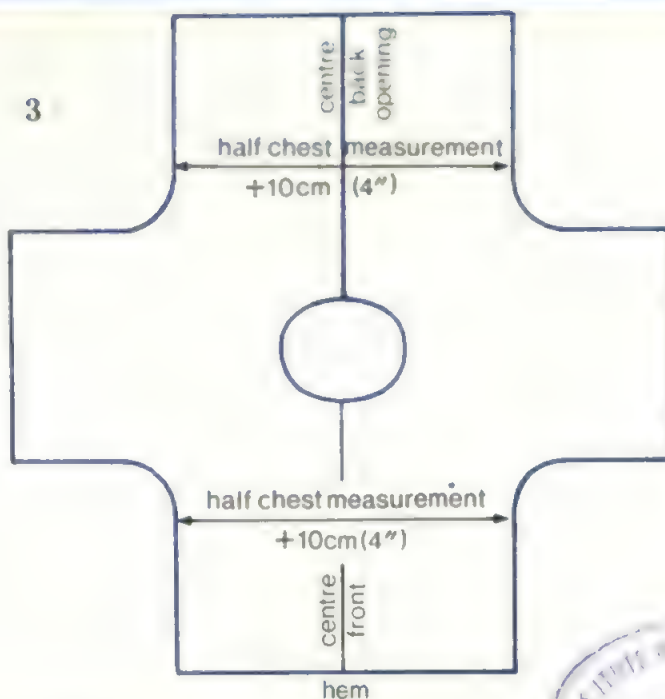
□ Bind both sides of centre back opening and then bind neck edge, leaving about 20cm (8") of binding free at each end for ties.

□ Fold ties in half lengthwise, with wrong sides together, turn in raw ends and topstitch close to the edge.

□ Stitch on any desired trimming at this stage while garment is flat.

□ Make continuous French seams from wrist to hem edge at each side.

□ Bind the sleeve and hem edge or turn up hems and slip stitch by hand.



measurement for centre back line make pattern from fig.4 (already described).

□ Pin pattern on to single fabric, with centre front and centre back on straight of grain.

□ Cut out allowing 1.5cm ($\frac{1}{2}$ ") seam allowance all round, except on the hem, neck and neck opening. Make a hem allowance of at least 5cm (2"). There is no need to make a seam allowance on neck and neck opening as these edges are bound.

Note: if you intend to print on the fabric mark centre of neck with a single tailor's tack; print and then cut neck.

□ Mark in the tucks with lines of continuous tailor's tacks (Sewing chapter 9, page 716).

□ Tack and stitch in the tucks on the right side (fig.5), matching first line of tailor's tacks to the second, third to fourth and so on to make four tucks facing outwards on each side. Press tucks towards sleeves.

□ Bind neck and back opening with bias binding.

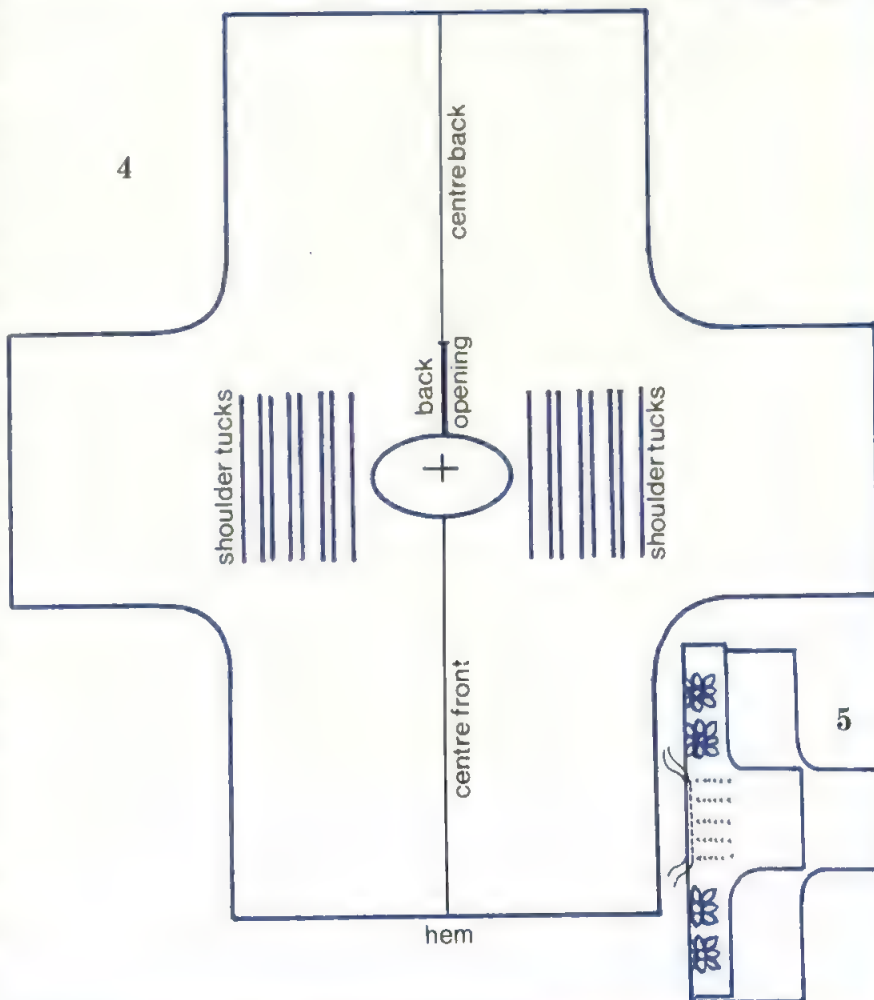
□ Work two or three rows of shirring the width of the machine foot apart on cuffs, the first 4cm (1 $\frac{1}{2}$ ") from cuff edge (Sewing chapter 3, page 96).

□ Turn 6mm ($\frac{1}{4}$ ") and then 9mm ($\frac{3}{8}$ ") on each cuff edge to the wrong side and stitch in place by machine.

□ Make a continuous French seam from wrist to hem edge at each side.

□ Try on dress, turn up hem and slip stitch by hand.

□ Sew on button and make buttonhole at back neck.



Scrolling for decoration

Enamel 7



Scrolling, or swirling as it is sometimes called, is quite one of the most exciting techniques for decorating pieces of enamel.

In the decorative techniques covered so far the patterns have been created before firing. With scrolling, although the colours are positioned before firing, the effect is created by manipulating the molten enamel with a scrolling tool while it is in the kiln.

It is probably easiest for a beginner to use thread and lump enamel for scrolling. Many enamellers, however, scroll with dry enamel powder positioned carefully with a spatula. (You can make your own spatula by hammering flat one end of a piece of stout copper wire and inserting the other end into a cork.) Other people prefer a 'wet pack', a paste made from enamel powder mixed with distilled water in which a little gum arabic (about 1 teaspoonful per 280ml (1pt)) has been dissolved. The wet pack is positioned using a small spoon-shaped tool (a salt or mustard spoon would do) to scoop up the paste and a spatula to push it into position.

Scrolling tool

A scrolling tool is a length of stout

This piece has been scrolled ready for gluing to a wooden bottle stopper.

Designer: Phoebe Douglas.



wire, about 30cm (1') long, with 1.5cm (1/2") at one end bent at right angles and sharpened to a point. The other end is inserted into a wooden handle (fig.1). It is possible to make your own tool from a piece of a wire coat-hanger and part of an old broom handle.



1. The scrolling tool.

How to scroll

Position your chosen colours on a pre-enamelled surface. If thread and/or lump enamel is used it is advisable to sift a thin layer of the base colour on to the surface before these are positioned so that they do not slide around when the piece is placed in the kiln.

Put the piece in the pre-heated kiln, remembering where you have placed your colours, as it is almost impossible to distinguish them when the piece is molten.

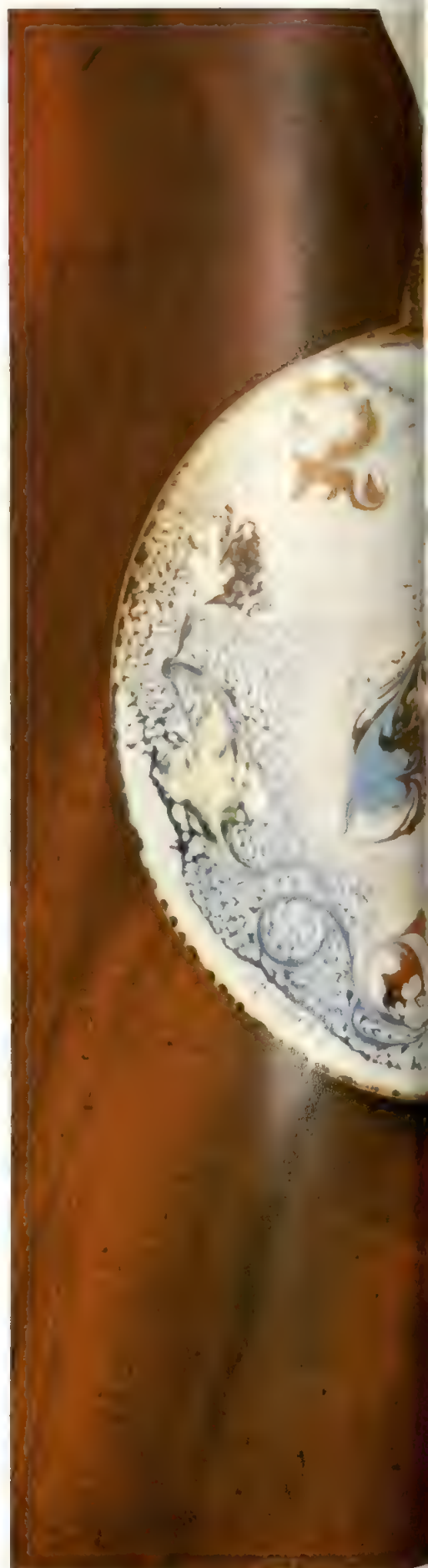
When the enamel is red hot and in a molten state, open the kiln door, heat the point of the scrolling tool against the wall of the kiln, then gently stir round the colours, being careful not to press down too hard. It is only the top layer of the enamel you want to scroll so do not dig down to the metal itself.

Some enamellers heat the scrolling tool in a gas flame such as a butane torch and thus avoid the possibility of the scrolling tool cooling and pulling the enamel off the work—the cause of many a disaster.

High firing is required for scrolling so the operation should be done as quickly as possible because the kiln will start to cool with the door open. Close the door for a few seconds to allow the enamel to flatten out before removing it from the kiln.

To begin with you will stir round your colours completely at random and perhaps achieve some fabulous results by sheer accident—and some disasters! Exciting though these happy accidents can be, the main purpose is to control

A scrolled plaque decorates the lid of an ice bucket and more scrolling is used on bottle stoppers. Designers: Richard Dent and Phoebe Douglas.





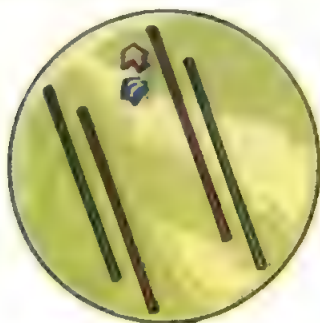
the medium and not let it dictate results. It is very rewarding, as you progress, to find that it is possible to exert a remarkable degree of control over your design both by the placing of the colours and by the direction in which you scroll. This, however, takes some time to achieve.

Designing

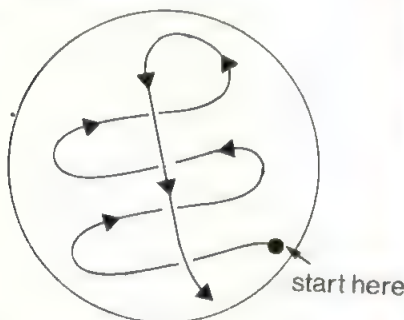
Artist enamellers using the scrolling technique, decide beforehand on the effect they want. They compose the work before firing, placing the powdered, packed, lump or thread enamel into known positions and known shapes before any work is done in the kiln. Thus the enameller knows where the colours are positioned when the surface of the work is in a molten state. Several firings may be necessary to obtain the required result and other layers of enamel may be added as the work proceeds.

Note: the number of layers and firings possible is largely determined by the thickness of the metal and of the layers of enamel. It is essential that the piece is counter enamelled if it is to be fired several times.

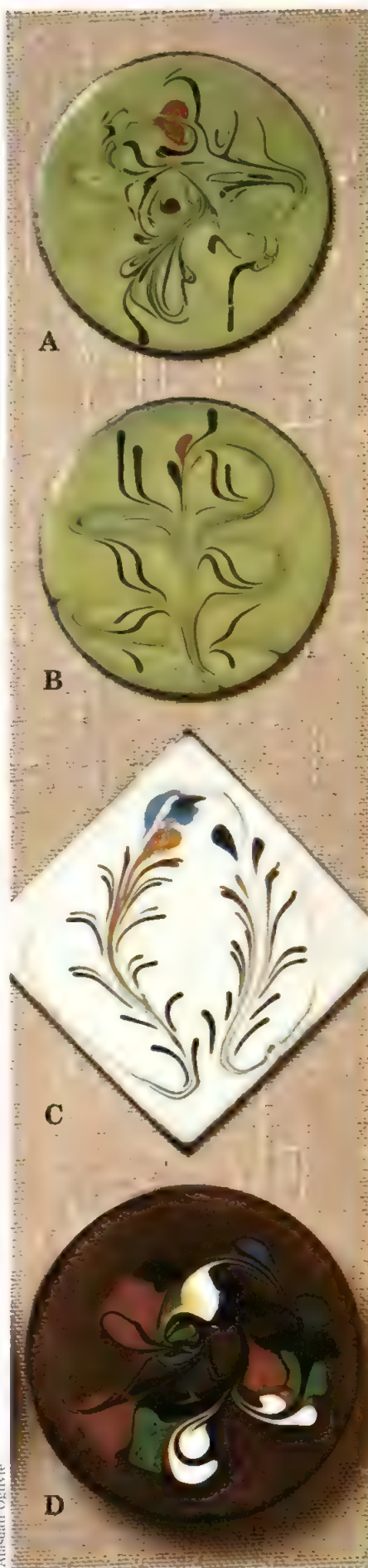
The top two pieces of the group in the photograph give examples of random and controlled scrolling. In both these pieces the enamel threads and lumps were placed in exactly the same position (fig.2), the top one was scrolled at random and the one below it was scrolled as shown in fig.3.



2. Positioning of threads and lumps for scrolling the top two pieces in the group on the right.



3. How to scroll the threads and lumps to obtain the controlled design—the second of the pieces in the group.



Scrolled brooch

The instructions are for the white piece in the group.

You will need:

Equipment. See Enamel chapter 1, page 106, plus a tripod or stilt and a scrolling tool.

Materials. 5cm (2") square metal blank.

Counter enamelling powder.

Opaque white enamel powder.

Enamel threads.

Small transparent lumps.

Anti fire-scale liquid (optional).

Emery paper.

Carborundum stone or fine file.

Brooch finding.

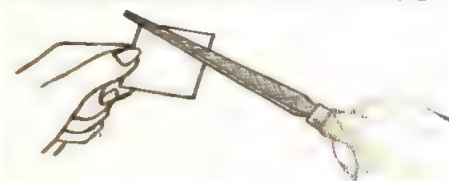
Strong adhesive (such as Araldite).

☐ Switch on the kiln so that it will be hot enough, ie bright orange, by the time you have prepared the metal blank.

☐ Prepare and counter enamel the piece (see Enamel chapter 2, page 190).

☐ Remove the fire-scale using emery paper.

☐ Clean the edges of the piece with a carborundum stone or a fine file (fig.4)



4. Cleaning the edges with a file.

and finish off with emery paper. This ensures that when you place the piece on to the stilt to fire the other side just the very edge of the metal and no enamel is in contact with the stilt. Therefore the enamelled surface is not damaged.

☐ Using tweezers rinse and dry the piece and place it on a sheet of clean paper.

☐ Sieve the opaque white powder evenly over the copper, paying special attention to the edges. Place the piece on to the stilt (fig.5) and fire.



5. The piece positioned on the stilt.

☐ When cool clean edges again.

☐ Choose your coloured threads and lumps. Here mainly light and dark

Scrolled pieces: A, random and B, controlled scrolling of the same arrangement of threads and lumps; C, brooch described here; D, example of controlled scrolling. Designers: Phoebe Douglas and Betty Grocock.

green threads have been used and transparent blue, amber and ruby lumps.

Break the threads into more or less even lengths and have them ready with the chosen lumps on a clean piece of paper.

Sieve a thin second coat of white enamel on to the piece, to prevent the lumps and threads from sliding about on the shiny enamelled surface when placing the piece in the kiln.

Using tweezers, place the threads and lumps carefully in position (fig.6)

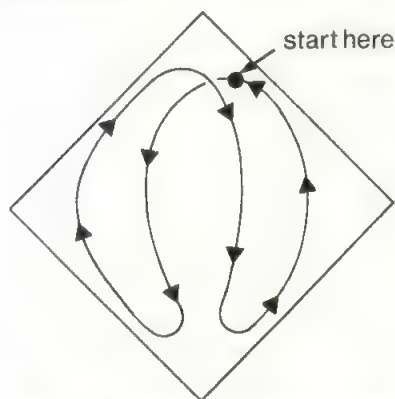


6. Positioning of threads and lumps.

with a light and a dark thread in each pair.

Using the spatula, lift the piece on to the stilt (placed on the mesh stand if the stilt has a flat bottom) and place it in the kiln. It is important to remember which way round you have placed the piece in the kiln as it is not easy to see the pattern when the enamel is molten.

□ When the piece is red hot, open the kiln door, heat the point of the scroller on the inside wall of the kiln and then gently scroll in the direction of the arrows (fig.7).



7. How to scroll the threads and lumps to obtain the finished design.

□ Close the door for a second or two to allow the enamel to flatten and then remove the piece from the kiln and leave to cool.

□ Clean the edges.

□ Attach a brooch finding to the back with adhesive.



General hints

Pickle bath. Another way of cleaning metal blanks and freeing them from any grease is to immerse them in what is called a pickle bath. An effective and safe pickle bath can be made from a solution of approximately one rounded teaspoon of common salt to half a cupful of vinegar. Put the solution into a shallow bowl or dish and immerse your metal blank. Leave it there for three or four minutes, then lift it out with tweezers, rinse in clean water and dry it. Enamel the blank in the normal way.

This solution is quite useful for getting rid of some of the fire-scale after one side has been enamelled.

In constant use the solution should last for several days. After a time it will begin to go a greenish colour. This does not mean it is any less effective, but when you find that it takes a lot longer to clean the metal then is the time to throw it away and mix some more.

Making your own 'jewels'. Sometimes it is nice to have a raised jewel-like decoration on a brooch or pendant. Very effective jewels can be made by melting small pieces of glass.

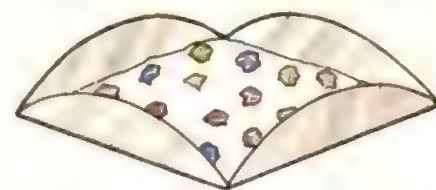
It is not practical to fire pieces of coloured glass in the kiln with enamels, but it is possible to melt glass on its own and then glue it to the enamelled piece.

Old wine bottles are readily available and can be smashed by placing them between thick layers of newspaper and hitting them with a hammer.

Very effective 'jewels' can be made by melting small pieces of glass. Use them to decorate enamelled pieces.

To melt the glass you need a flat bed of plaster of paris—the glass will not stick to this.

Make a 'tray' from a circular piece of tin by bending up the sides (fig.8).



8. A 'tray' made from a circle of tin.

Spread an even layer of plaster in this, pressing it down flat. With tweezers pick up the bits of glass and place them gently on to the plaster. Choose pieces more or less the same size as the larger ones will take longer to melt.

Put the tray on to the wire mesh stand and place it in the kiln. You will have to open the door periodically to see how the glass is progressing. The pieces will contract slightly and take on a dome-like form. When this has happened, turn off the kiln and leave the glass to cool in the kiln. This is important because the glass, certainly the larger pieces, will crack if cooled quickly.

When cool take the jewels off the plaster of paris bed, wash off any powder which may be adhering to the bottom and they are ready for use.

Screen printing on fabric

Colour
printing 14



Because of the ease with which motifs can be repeated by screen printing the technique has become one of the most popular means of decorating both in the home and industrial. This chapter deals with simple applications of fabric screen printing including borders and decorating small areas of garments and household linens. While all-over, repeated patterns and multi-coloured printing on lengths of cloth



(and paper) is discussed in the following chapter.

Colour

Cloth is printed with dyes and fabric printing colours, many made specially for screen printing. Colours often require special thickening agents to give them the right consistency. In the case of Dylon cold water dyes, for example, Paintex thickener must be added. When buying colours for fabric screen printing always make this clear to the supplier so that any necessary additives can be provided.

Preparing the work surface

Printing on fabric is very similar to printing on paper but you must use as a base a specially prepared work table (fig.1) and dispense with the wooden base used for printing paper. Spread an old blanket across the table you will be working on and tack or tape it down underneath the table so it is taut. It is important that the printing surface is flat.

To protect the blanket stretch polythene sheeting over it and secure this as well. Then attach your fabric, nicely ironed, on top either by taping it down or with pins. If pins are used cover them with tape to protect the screen from getting torn.

Printing a border on fabric

For your first fabric print try using a paper stencil of the peacock motif shown. You can print a single motif or, better still, make a row of peacocks and then make the fabric up into a garment or print the peacocks as a border on a table cloth.

Prepare the stencil as for printing on paper (Printing chapter 13, page 962). The action of pulling the ink across the screen should hold the stencil in position but the eye of the peacock and the 'eye' of the tail can be more safely held in place by sticking them to the mesh with a dab of household adhesive.

Registration. Work out the spacing you want on the fabric by cutting out your trace pattern and marking its position with tailor's chalk on the cloth. If several peacocks are to be printed in a row make a chalk line across the fabric as a guideline for the bottom edge of the screen and mark the position of each peacock on it so they will print in a straight line.

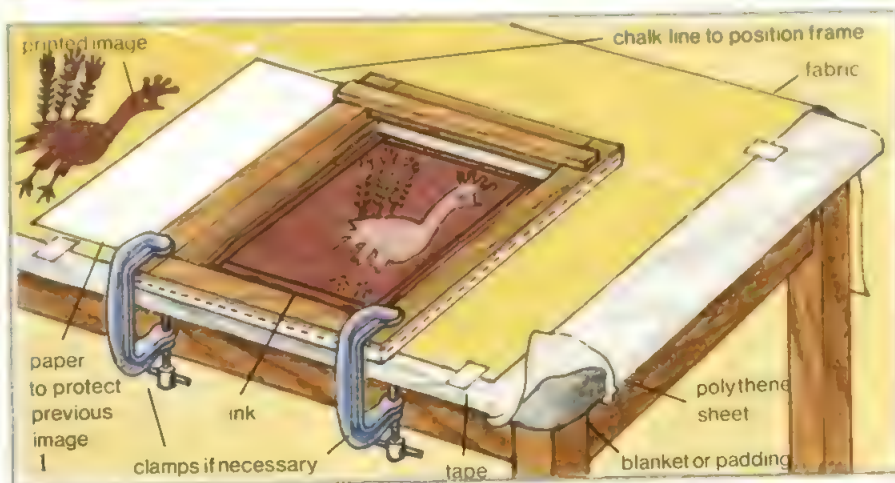
To print. It is advisable to get someone to hold the screen frame down while you squeegee or you can clamp the frame to the printing table with G clamps as shown in fig.1.

Print a trial print first on a spare piece

A screen printed motif can be placed in a number of different ways on fabric to give a different look. By Anne Lomax.



Dick Miller



of fabric to see if one or two strokes are needed. Absorption varies and some fabrics need a double application of the dye. After printing the first image lift the screen by raising one edge first as though it were attached to the base. This will prevent smudging.

If you are printing on a T-shirt or other made up garment, insert card or paper between the layers of fabric to keep the dye from seeping through to the other side.

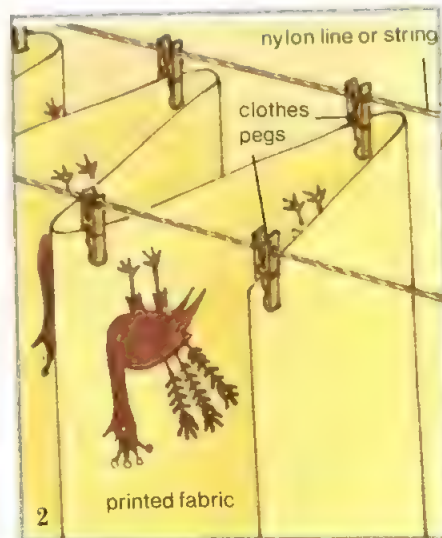
Repeat printing. When printing a repeating pattern such as the peacock on fabric, don't put any part of the screen down on top of the first print unless you are sure it is absolutely dry. Otherwise the dye may off-print on to the screen and smudge the cloth at the next printing. To prevent this and to avoid having to wait for each motif to dry before continuing, allow the first print to dry for a minute and then cover it with a piece of paper before continuing with the next one alongside it.

To dry the printed cloth hang it up using a double line (fig.2), if it is a sizable length. When it is dry fix the

Top: peacock motif is an easy stencil to cut; it can be traced from the photograph and enlarged to desired size.

1. Table prepared for screen printing a border on fabric looks like this.

2. Printed fabric can be hung up to dry using a double line.



Paul Williams

dye according to manufacturers' instructions. This usually means ironing the fabric on the wrong side.

Shellac stencils

The disadvantage of paper stencils is that they disintegrate fairly quickly by continual saturation with ink. Shellac stencils, on the other hand, are long lasting and give a fine, sharp print. Furthermore, they are often easier to make since they are painted and so curved designs and more intricate shapes, which would be difficult to cut out in paper, can be quickly made.

Gloss paint and most varnishes can also be used for making stencils for fabric printing but these are not recommended for printing on materials with oil based inks since these often need thinning with white spirit which might loosen the stencil. (The solvent for shellac is methylated spirit.) Shellac, like paint and varnish, can be bought in hardware shops.

Painting stencils. Shellac and paint or varnish stencils are made by painting all the areas of the mesh screen that are not part of the design; in other words turning the mesh screen into a stencil by painting those parts that would have been covered by a paper stencil. The painted areas dry to a hard finish, blocking the 'pores' of the mesh and preventing the dye from penetrating to the printing surface below.

Making a shellac stencil. With the mesh stretched taut on the frame place your design in position under the

screen and sketch the outline on to the mesh with a soft pencil.

Then turn the screen over and, working over newspapers, paint two coats on the outside of the mesh. Cover those areas which are *not* part of the design. Two coats are necessary to make sure there are no pinholes remaining where ink could penetrate and spoil the fabric below. When it is dry, turn the screen over, prop it up and paint the gummed tape around the inner edge of the frame too. Your screen is now ready to print.

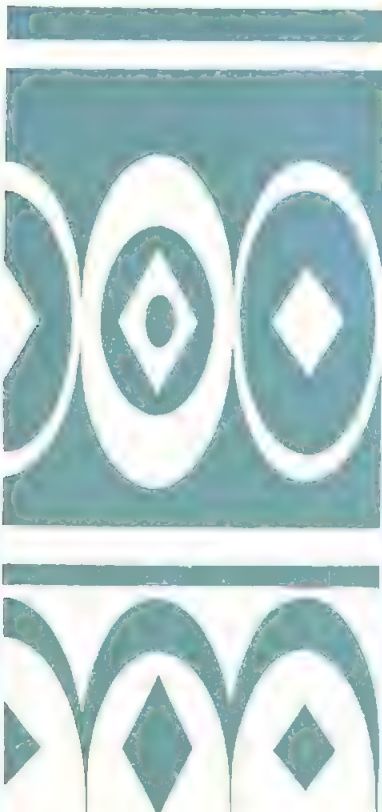
Cleaning the screen after use:

Shellac screens may be cleaned by soaking the screen in methylated spirits and then rubbing it with spirit soaked rags. Then give it a final wash with detergent and warm water and the screen is ready for re-use. Paint and varnish are much more difficult to remove.

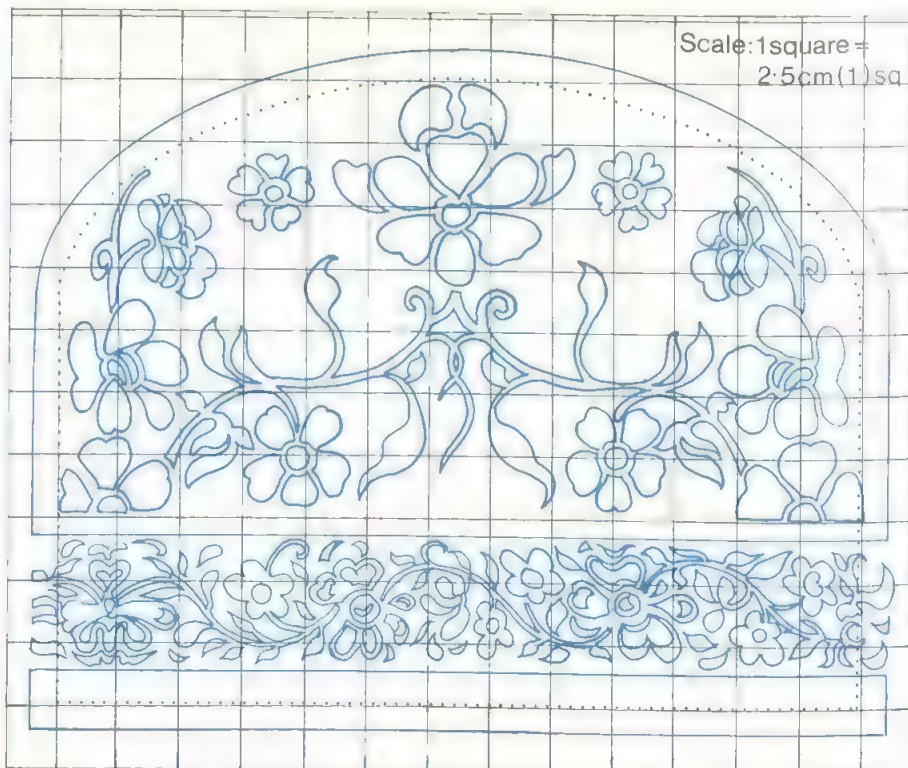
Smocks

The children's smocks overleaf are printed with shellac stencils as is the mother's. The border for the garments can be used in several different ways as the photograph illustrates. Borders on hem, cuffs or neck line can all be printed on the cut out fabric by lining up the design as with the peacock stencil and printing as previously described. Repeat the trace patterns for the designs (figs.3,4) across the width of the screen so several motifs will print at once. They could also be used to decorate a table cloth, place mats or sheets and pillowcases.

3. Trace pattern for motif shown on smocks overleaf. Trace image twice as only half is shown. A row of motifs may be used on screen to print borders quickly.



4. Trace pattern for another motif shown overleaf on children's smocks.



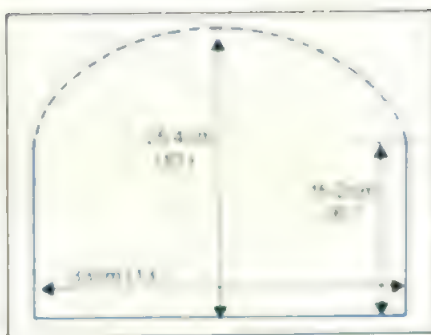
5. Graph pattern of tea cosy motif designed by Janet Allen.

How to screen print a tea cosy and napkin

The cotton cloth of the tea cosy and napkin was green to begin with. The border is made by printing the design with blue dye. The rest of the fabric is printed using a reverse stencil.

Reverse stencil means that the areas of the design are masked with shellac instead of the background areas. This way the design remains the original colour—in this case green—and the background changes colour.

Dyes. The tea cosy could be printed in another colour but if you are printing with dyes on to an already coloured cloth bear in mind that they blend.



6. Tea cosy pattern can be drawn free-hand using the measurements given.

Below: cheerful tea cosy and napkin design by Janet Allen.

Blue, for example, printed on yellow cloth would become green. If the dye is very thick, as it is on the peacock cloth, this effect can be minimized, however. A less heavy red would have turned orange.

Remember also to use either natural fibre cloth, such as linen, cotton, silk or wool, or viscose rayon; synthetic fibre mixtures will either not dye at all or will dye as a much paler shade.

To make the tea cosy, print the fabric as described. The finished size of the cosy shown is 33cm (13") x 26cm (10").

Draw a pattern (fig.6) and cut lining 1cm (1/4") smaller than printed fabric. Assemble in normal way.



Mosaic pictures using seeds

Seedwork 2



Seeds lend themselves extremely well to making mosaic pictures and ideas can come from a number of places.

Inspiration. One of the best sources of inspiration is from books and magazines; it is far easier to copy the basic lines of a photograph, for instance, than to get a real bird or fish to sit still while you draw it. Choose subjects with areas of solid colours to begin with and then try building textures and making delicate shading effects.

Museums and galleries also provide in-

spiration and both paintings and designs can be interpreted in novel ways using seeds. Dyed grains of rice, for example, could be employed to make a seed picture based on a work by Seurat—each grain representing the 'pointil-

The subtlety of line and shading possible with seeds is well-illustrated in this portrait by Glenda Marsh of her husband. The delicate hues of millet and other small, seemingly insignificant seeds are used to full advantage.



lism' that characterises this artist's work.

Abstract and geometric patterns lend themselves as readily as representational ones and can serve to underline the wonderful textural qualities that can be exploited. When considering a subject always try to think about this element as well as the colours with which you will be working.

Seed texture

Texture is perhaps less readily appreciated by beginners than colour yet it adds incredible richness to seed design. Some seeds, like peach stones, are textured in themselves but others can provide textural patterns according to the way they are laid, ie face down, on their side or overlapping as in the portrait shown. The vivid contrasts of different types mixed together emphasize their respective textures.

Colour

Seeds do not come in all colours as do paints and this imposes a certain discipline in design. Before you plan your seed mosaic it is wise to have in mind the colours which are readily available and for this reason it is a good idea to make up a seed chart.

Seed chart. By pasting a seed of each variety on a card, grouping them in their respective hues, you can tell at a glance the extent of your working range or spectrum. At first sight your palette will appear to be loaded with whites, blacks and browns, but you will also find golds, greys and greens quite plentiful. Blue is very scarce, mauve being one of the few natural blues in existence.

Colour remedies are possible, however, and one solution is learning to place seeds so that the colours affect each other. For example, white seems much whiter when surrounded by black than by a lighter colour and any bright colour will appear more brilliant when placed next to a dull one.

Another way of extending your colour range is to colour your baseboard, either by giving the whole ground a coat of emulsion paint or poster colour or by painting selected parts of your design. As seeds are never uniform in shape it is impossible, except in the case of very tiny seeds, to completely cover the baseboard. Usually a small amount of painted background will be apparent between the seeds and this will be sufficient to influence the colouring. Some seeds such as rice and split lentils are translucent and the background will show dimly through. When painting a background, however, be very selective in your choice of colour for too bright a ground colour could kill the colour of your seeds.

Dyeing. It is of course possible to paint seeds but it is far better to dye them since this does not change the surface quality. Ink, food colouring and sometimes food itself, eg coffee, can be used to dye seeds satisfactorily; but for large quantities of seed it makes sense to use a hot-water fabric dye.

Place a small amount of colouring in a saucer and test one or two seeds before going ahead to make sure the colour is right. Ink or food colour may need to be diluted with water. Use commercial dyes according to manufacturers' instructions.

Turn seeds in the colouring until they are uniformly covered. Spread them out on tissues or blotting paper to dry. Do not keep them in a huddle as they may begin to sprout.

Enlarging your seed collection

As you become adept at handling seeds and fitting them in position, you will gradually begin to want a wider variety.

This is the time to branch out a little and investigate other sources of supply. Pet shops sell bird seed mixtures by the kg (lb): the bulk of any bird seed mixture may be jap, panicum or pearl millet which are all quite tiny and not very exciting in themselves but excellent for working fine detail or showing subtle shading. The portrait shown here, for example, is composed almost

A chart showing seed colours is a useful guide to seed mosaic.



Seed colours can be expanded by dyeing. Those shown are dyed with ink, commercial dye and food colouring respectively.

entirely of small birdseed and the natural colour variation of the millet has allowed the face to be modelled quite delicately.

In pet shops you will normally also get sunflower seeds, Indian corn, maple peas, tic beans and niger seed.

Gardens and woods are the natural source of seeds and although some are

difficult to collect when ripe, plants such as honesty, lupin, marigold, sunflower and nasturtium throw off a remarkable quantity of seeds which are very easy to collect. Trees yield 'conkers', ash and sycamore keys and bushes provide broom seeds, among many others. Seed cases from trees such as beech and horse chestnut and certain flower seed pods such as poppy and lily can add surface interest to a mosaic.

Many berries, though not really seeds, can be used too. These dry very well, retaining their colour and becoming pleasantly wrinkled. Rowan berries and dog-rose hips both retain their bright red hue, a colour which is rarely found naturally in seeds.

Fruits and vegetables are another ready source of seeds. Peaches, plums, cherries, apples and lychees all have seeds that can be washed and added to your collection. Melons also provide interesting seeds, as do marrows. If stored for a while unopened, the marrow seeds ripen within the fruit; they are large, white and flat and are easily separated from the flesh.

Gardening shops sell seeds in small quantities but these usually prove rather expensive in any substantial amounts and most seeds supplied in packets can be collected and preserved at home.

Preserving seeds

Flower seeds may only be used when they are fully ripe or they will shrivel or even go mouldy. Unfortunately most plants retain their seeds until they are ripened and then cast them in all directions at which point you may as well forget about trying to collect them. Therefore collect the flower heads before they are quite ripe, tie the stalks together in bunches, tie a piece of muslin around the heads and hang them upside down in a dry, airy place. Do not use a polythene bag or the heads could mildew. Some of the seeds may drop into the muslin of their own accord. If not, when the plant is perfectly dry, rub the heads gently between your fingers to dislodge the seeds. As long as the seeds are thoroughly dry they can then be stored in polythene.

Fruit and vegetable seeds must be cleansed thoroughly of all sticky residue before drying. Wash them in soapy water, scrubbing them gently, if necessary, to remove any fibrous matter, and then lay them on blotting paper, tissue paper or dry sand to dry. Avoid drying in direct sunlight as this can bleach the colours and spoil them. Leave them for at least two weeks in a dry, ventilated place. Seeds may be put in a slow oven for an hour or two to speed the drying process but too much heat can ruin them.

Colour Chart

Colour	Seeds
Slate grey/black	lupin, tares, buckwheat
Jet black	niger, sunflower, black beans, Cyprus tares
Red-black	rape
Chocolate brown	dark roast coffee beans
Rich brown	tic beans, light roast coffee beans, linseed, 'conkers', acorns, gunga peas
Light brown	sycamore keys, lily seeds, sunflower
Crimson	kidney beans
Light red	milo
Scarlet	(rosehips, rowan berries)
Red-orange	gold of pleasure
Orange	split lentils
Yellow	yellow split peas, clover
Gold	oats, mazagan canary, paddy rice, panicum millet, peach, plum and cherry stones
White	melon, marrow, sunflower, lupini, black-eyed beans, haricot beans, butter beans, pearl millet, Sudanese, dari, honesty
Mushroom/fawn	gunga peas, chick peas, pearl barley, jap millet
Blue	poppy seed, maw
Green	split green peas, mung beans, green lentils
Grey-green	hemp, peas, unroasted coffee beans
Speckled	dwarf kidney beans, gunga peas, borlotti
Striped	sunflower, maple peas

Fantasy fish

This is a good example of an imaginative picture inspired by a picture of a real fish. The overlapping sunflower seeds that form the body give it a remarkable three dimensional quality. All the seeds used are listed below but substitutions can be made and the colour scheme can be changed by dyeing.

In this picture as with all seed pictures you should leave a border if you intend to have it framed.

You will need:

Stiff card in dark grey colour 24cm (9½") x 34cm (13½").

General purpose glue such as Copydex. Tweezers and plastic toothpick or stick for applying glue.

Tracing paper and dressmaker's carbon for design.

Green food dye for melon seeds.

Seeds: a selection of melon, milo, Cyprus tares, lentils, canary seed, pearl millet, green split pea, gunga peas, niger, black-eyed beans, Sudanese dari and sunflower seeds.

□ Dye the melon seeds in food colouring as previously described.

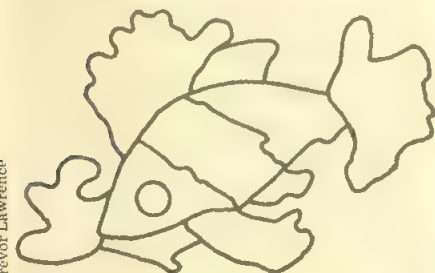
□ Trace the fish outline from the photograph and divide in sections (fig.1). Transfer the pattern on to cardboard.

□ Start at the centre sections and work outside areas of the picture last. Apply all seeds, except overlapping sunflower seeds, according to the instructions in Seedwork chapter 1, page 976.

□ The overlapping seeds are laid slightly differently. Put the glue on the seed you are applying and on both the part of the board it will cover and the part of the seed which it will overlap. Allow glue to dry for 10 to 15 minutes before joining. This way you will get instant bondage and will not have to hold the seed in an awkward position while the glue sets.

Colourful fantasy fish by Glenda Marsh is made with a variety of seeds and is shown full size. Use the outline of the photograph as a trace pattern. The seed chart overleaf and the photograph of different types of seeds in Seedwork chapter 1, page 976, gives guidance for seeds to use.

1. Divide trace pattern into sections as shown to make seed placement easier.





Symmetry in design

Design
know-how 36



A symmetrical design is an arrangement, pattern or group of shapes and forms that divides down the central section into two identical halves.

For the beginner symmetrical design is easy to achieve and satisfactory to use as it gives order and an easily seen balance. To find out what a symmetrical design will look like just hold a mirror at right angles to it (fig.1). Try this with ordinary objects such as stamps, matches and beads.

Natural forms such as leaves, flowers

and ferns are good examples of symmetrical design. The cross is an excellent example. Even when elaborated it still retains its basic symmetrical shape (fig.2).

You will find that symmetry plays an important part in most crafts such as jewelry (fig.3), embroidery (fig.4), fabric printing (fig.5) and pottery (fig.6).

Experiments

These are very simple ways to create

perfectly symmetrical shapes

You will need:

Squares of white paper, scissors, pencil and ruler.

Ink or paints.

A. Fold a piece of paper neatly in half. Cut simple angles and curves on the outer edges of the paper.

Open out the paper and draw a pencil line down the middle. Each half of the paper is symmetrically balanced and equally weighted.

B. Fold another square in half. Paint any design on the inner half of the paper with ink or paint.

Press the other side on to it. Open up the paper and you will have an abstract symmetrical pattern.

Disadvantages. Symmetry can sometimes be a little rigid. If a pattern full of movement is contained within the symmetrical design this problem can be overcome (fig.7). The design seems lively but still restrained.



1. A mirror will reflect a symmetrical image. 2. Many objects such as a cross, are naturally symmetrical. 3. A necklace, equally balanced on both sides, to fit the human body. 4. An embroidered flower design. 5. Symmetry lends itself to the repetition of pattern. 6. Symmetrical pot seems strong and solid. 7. The best of both worlds?—movement within an orderly framework.

